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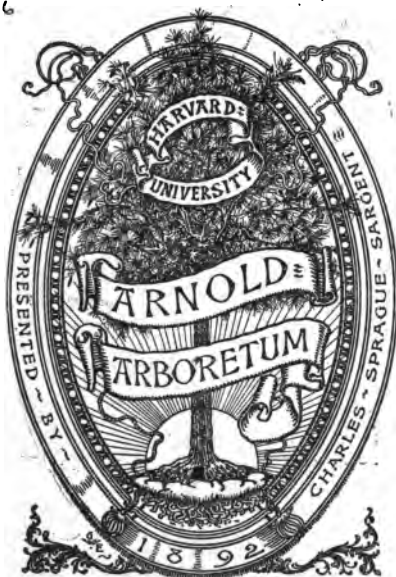
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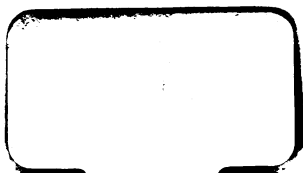
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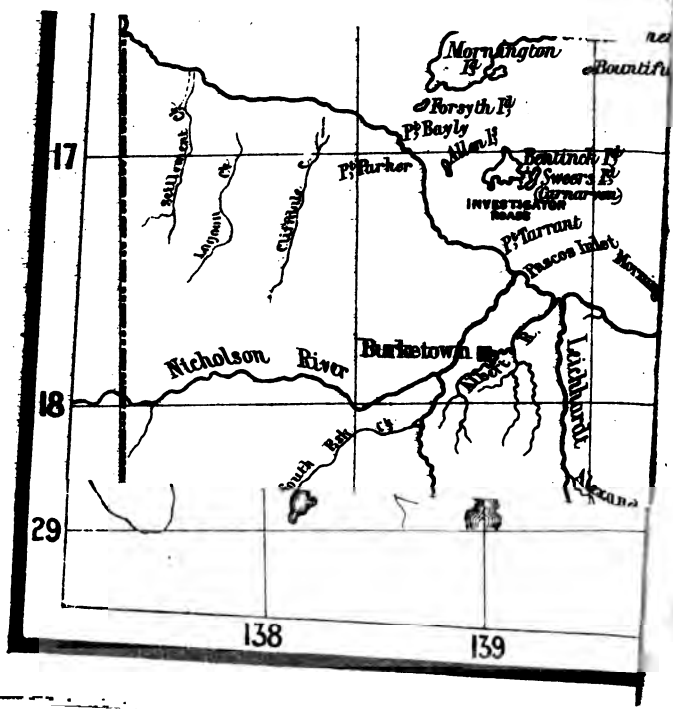
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COLONIAL & INDIAN EXHIBITION, LONDON, 1886.

Queensland.

CATALOGUE

OF THE

EXHIBITS

IN THE

QUEENSLAND COURT.

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1886



BRISBANE:

By AUTHORITY: JAMES C. BEAL, GOVERNMENT PRINTER, WILLIAM STREET.

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Printers and Publishers to the Royal Commission,

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1886.

1928

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Commission in London.

Executive Commissioner.

**THE HON. JAMES FRANCIS GARRICK, C.M.G., Q.C., AGENT-GENERAL
FOR QUEENSLAND, *Royal Commissioner.***

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PREFACE.

IN the classification adopted in the following description of the Exhibits in the Queensland Court, the Commissioners have had in view the desirability of bringing vividly before the public mind the resources and vast capabilities of the colony of Queensland, and of illustrating in some measure their varied character. It will be readily understood that in a country of such extended area the Commission has experienced some difficulty, in the very limited time at its disposal, in forming a collection which should illustrate and be thoroughly representative of the products of the colony. The great distances from Brisbane from which many of the Exhibits could only be obtained, the difficulties of communication and transit inherent in a new country, and the hurried manner in which, of necessity, the collection has been made, have all exercised their retarding influences on the plans of the Commissioners; while the disastrous drought, unfortunately prevailing throughout the whole of the past year and almost unprecedented in its severity, has made it impossible, in some sections, to obtain Exhibits fairly representative of the produce of the colony. This is more especially the case in the pastoral and agricultural groups.

The Exhibits in Group VIII. illustrate very clearly the great variety and immense value of the mineral wealth of the colony, while the collection of woods also speaks for itself. The general fittings of the court are of indigenous woods, chiefly of the Bunya Bunya Pine (*Araucaria Bidwillii*), a wood only found in Queensland.

The Photographs are evidence of the varied character of life in the colony, as exemplified in the bush shelter of the early settler and the imposing residence of the successful colonist; while the Exhibits from the schools are a proof that in the search for wealth the development of the intellectual faculties of the rising generation has received that full attention which its importance deserves, and that Queensland will compare favourably in this respect with any portion of Her Majesty's dominions.

The Ethnological Collection affords an interesting opportunity of studying man in his wild state. The gradual disappearance of the aboriginal tribes before the march of civilisation renders it, year by year, more difficult to obtain specimens of their handiwork.

The chief wealth of the colony has hitherto been derived from its raw products, and it is only recently that manufactures to any extent have been entered upon. The Exhibits, however, while evidencing the great material progress of the colony since its separation from New South Wales, will at the same time give an idea of the latent wealth awaiting enterprise and capital for its development, affording employment both for the capitalist and labourer, while the rapid increase of the population will afford a ready market for their wares. Considering that in this vast territory of 668,224 square miles the population, according to recent returns, is, in round numbers, but 327,000, it is patent that there is plenty of "elbow room," and that those with strong hands and willing hearts may find in Queensland that vent for their energies which is denied them in the crowded States of the Old World.

COLONIAL AND INDIAN EXHIBITION, LONDON, 1886.

QUEENSLAND COURT.

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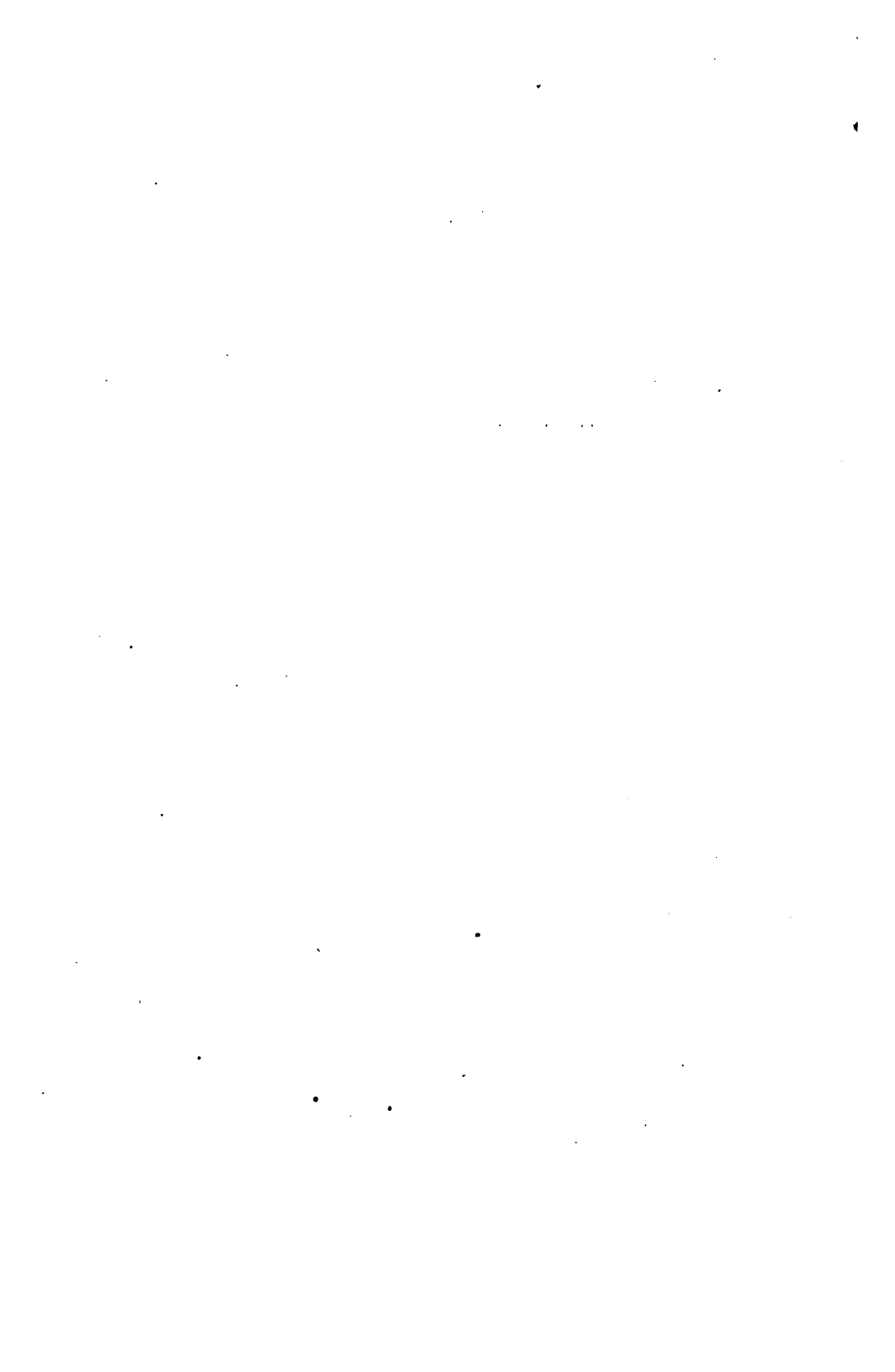
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CATALOGUE OF THE EXHIBITS

IN THE

QUEENSLAND COURT.

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2. **AUSTIN, WILLIAM, Brisbane.**
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3. **CLARKE, JOSEPH A., Brisbane.**—(1) "Orchid, *Stenocarpus sinuatus*." Water-colour. (2) "Orchid, *Dendrobium bigibbum*." Oil-painting. (3) "Orchid, *Dendrobium Dalhousiana*." Oil-painting. (4) "Orchid, *Nepenthes Bernaysii*." Oil-painting.

4. **DENNIS, HERBERT, Brisbane.**
—"Anatomical Study from Plaster Cast." Crayon drawing.

5. **EWART, WILLIAM, Brisbane.**
—"Portrait of the Honourable Samuel Walker Griffith, M.A., Q.C., Premier of Queensland."

6. **JENNER, WALTER, Brisbane.**
—(1) "S.S. 'Roma' entering Sebasia Channel after the eruption of Krakatoa. Sea covered with pumice. Signal from Dutch man-of-war flying 'Stop! you are running into danger.'" (2) "S.S. 'Roma' off the remains of Krakatoa and the south entrance of the now blocked Sebasia Channel, steering for Batavia."

7. **MILLS, THOMAS, Charters Towers.**—(1) "Charters Towers Gold Field." Oil-painting by W. J. Allom.

8. **SAMWELL, WILLIAM, Gold Warden, Etheridge.**—Water-colour Sketches representing views on the Etheridge Gold Field, viz.:—(1) "Rocky Gorge, Einasleigh River." (2) "Copper Lode, Gilberton, containing Bismuth, Silver, Copper, and Gold. Lode about 80 feet wide." (3) "Gilberton, North Queensland." (4) "Chinese Alluvial Mining, Gilberton—'Cradling a Big Nugget.'" (5) "A Gold-Warden's Camp on the Robertson River." Result of a day's hunting—ducks, pigeons, turkey, kangaroo, fish, turtle, and iguanas. (6) "The Fort, a Natural Formation of Sandstone and Conglomerate on the top of

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CLASS 2.—*Sculptures, Die-Sinking, and Embossing.*

CLASS 3.—*Architectural Drawings and Models.*

9. **CLARKE, J. J., Brisbane.**—(1) Public Offices, Brisbane. (2) New Town Hall, Brisbane (premiated design). (3) Interior of Grand Hall, New Town Hall, Brisbane.

10. **GAILEY, RICHARD, Brisbane.**—(1) Offices of the Brisbane Newspaper Company, Limited. (2) Treasury Buildings, Brisbane. (3) Girls' Grammar School, and Pupils' Residence, Brisbane. (4) Head Master's Residence, Boys' Grammar School, Brisbane. (5) Buildings, corner of Queen street and Albert street, Brisbane. (6) City Brewery, Margaret street, Brisbane.

11. **HOEPFNER, HENRY, Brisbane.**—Design for a Villa Residence.

11a. **PUBLIC WORKS & MINES DEPARTMENT, Brisbane.**—(1) The Immigration Depot, Brisbane. (2) Immigration Depot, Rockhampton. (3) Court-house, Rockhampton. (4) Court-house, Mackay. (5) Court-house, Warwick. (6) Hospital, Maryborough.

12. **STANLEY, F. D. G., Brisbane.**
—Queensland National Bank, Brisbane.

CLASS 4.—*Engravings, Lithographs, &c.*

CLASS 5.—*Photographs.*

13. **BANCROFT, THOMAS L., M.D., Geraldton.**—"Geraldton and Johnstone River."

14. **BERNAYS, LEWIS ADOLPHUS, F.L.S.,** Brisbane.—"Brisbane Water Reservoir, Gold Creek."

15. **COBB & CO.,** Brisbane.—Two Views of a "Cobb's Coach."

16. **CRAN, ROBERT, & CO.,** Bundaberg.—"Millaquin Sugar Refinery."

17. **FRIEND, HENRY, Sen.,** Gladstone.—Eleven Views of Gladstone.

18. **LETHEM, H. W., & SOUTH-ERDEN, R. W.,** Brisbane.—"A Railway Surveyor's Camp."

19. **LOMER, A., & CO.,** Brisbane.—Views of Brisbane and District.

20. **QUEENSLAND COMMISSIONERS,** Brisbane.—(1) "Views of Brisbane." (2) "Bush Township and Station Life." (3) "Bush and Plantation Life." (4) "Clermont and District." (5) "Cloncurry and District." (6) "Cooktown." (7) "Darling Downs." (8) "Etheridge Gold Field." (9) "Gladstone and District." (10) "Gympie and District." (11) "Ipswich and District." (12) "Lake's Creek Meat Preserving Works." (13) "Beenleigh and District." (14) "Mackay and District." (15) "Main Range, Toowoomba." (16) "Maryborough and District." (17) "Mount Britton Gold Field." (18) "Mount Morgan

Gold Mines." (19) "Queensland Aborigines." (20) "Rockhampton and District." (21) "Roma and District." (22) "Squatting Life on the Darling Downs." (23) "Toowoomba and District." (24) "Yeppoon."

21. **RICARDO, PERCY R.,** Brisbane.—Brisbane in 1858, 1862, and 1885.

22. **SUTTON, J. W., & CO.,** Engineers, Brisbane.—Views of the Exhibitors' Works and Machinery, Ships, &c., constructed by them.

23. **TUCKER, Rev. W. F.,** Bowen.—Views of Bowen.

CLASS 6.—*Works of Art not otherwise specified.*

24. **ADDISON, E. L.,** Manse, Bundaberg.—(1) White Satin Cushion, hand-painted—Flowers. (2) Two White Velvet Cushions. Poonah painting.

25. **ALTERIETH, Miss, Mackay.**—Basket, made from seeds gathered from trees, shrubs, and beans, growing in the Mackay District.

26. **DE JERSEY, Madame,** Brisbane.—Flowers made of Burrumundi Fish Scales, and Shells.

Group II.—EDUCATION.

CLASS 7.—*Educational Appliances, Models of Schools, School Furniture, and Books.*

CLASS 8.—*Maps, Charts, and Plans.*

27. **McKELLAR, J. A.,** Brisbane.—Map of Brisbane.

28. **POST AND TELEGRAPH DEPARTMENT,** Brisbane.—Map showing Postal and Telegraph routes.

29. **PUBLIC LANDS DEPARTMENT,** Brisbane.—(1) Map of Queensland, in six sheets. Edition 1885. Scale: 16 miles to the inch. (2) Map of part of Moreton District. Scale: 2 miles to the inch. Illustrating the general arrangement adopted in publishing detail maps of the principal settled districts of the colony. (3) Maps, lettered to correspond with the preceding exhibit, and showing further subdivisions, giving details of areas and measurements of various classes of land alienated from the Crown. Scale: 20 chains to the inch. (4) Map of Brisbane. (5) Map of Queensland, showing Agricultural, Pastoral, Geological, and Mineral Areas.

30. **PUBLIC WORKS & MINES DEPARTMENT,** Brisbane.—(1) Map of Day Dawn P.C. and Day Dawn Block Gold Mines, Charters Towers. (2) Map of Charters Towers, showing total yields from principal Mining Leases. (3) Map of Gympie Gold Field, showing total yields from principal Mining Leases. (4) Map of Ravenswood Gold Field, showing total yields of principal Mining Leases.

31. **RAILWAY DEPARTMENT.**—Railway Map of Queensland, prepared by the Chief Engineer for Railways, Southern District, from the latest Maps published by the Department of Public Lands, Brisbane.

32. **SIRCOM, J.,** Georgetown.—Map of the Etheridge Gold Field.

33. **THORPE, JAMES,** Brisbane.—Meteorological Map of Queensland.

CLASS 9.—*Specimens of Work done by Pupils in School.*

34. **BRISBANE, BOWEN BRIDGE ROAD, STATE SCHOOL.**—Twenty-nine Exhibits

35. **BRISBANE, CENTRAL, STATE SCHOOL (for Boys).**—Sixty-seven Exhibits.

36. BRISBANE, CENTRAL, STATE SCHOOL (for Girls).—Twenty-seven Exhibits.

37. BRISBANE, FORTITUDE VALLEY, STATE SCHOOL (for Boys).—Thirteen Exhibits.

38. BRISBANE, FORTITUDE VALLEY, STATE SCHOOL (for Girls).—Eleven Exhibits.

39. BRISBANE, KANGAROO POINT, STATE SCHOOL (for Boys).—Nine Exhibits.

40. BRISBANE, KANGAROO POINT, STATE SCHOOL (for Girls).—Fifteen Exhibits.

41. BRISBANE, KELVIN GROVE, STATE SCHOOL.—Six Exhibits.

42. BRISBANE, LEICHHARDT ST., STATE SCHOOL (for Boys).—Eighteen Exhibits.

43. BRISBANE, LEICHHARDT ST., STATE SCHOOL (for Girls).—Twenty-five Exhibits.

44. BRISBANE, SOUTH, STATE SCHOOL (for Boys).—Twenty-six Exhibits.

45. BRISBANE, SOUTH, STATE SCHOOL (for Girls).—Sixteen Exhibits.

46. BOWEN STATE SCHOOL (for Girls).—Sixteen Exhibits.

47. CHARTERSTOWERS STATE SCHOOL (for Boys).—Three Exhibits.

48. CHARTERSTOWERS STATE SCHOOL (for Girls).—Twenty-three Exhibits.

49. GLADSTONE STATE SCHOOL.—Seven Exhibits.

50. GYMPIE STATE SCHOOL.—Fourteen Exhibits.

51. GYMPIE, ONE-MILE, STATE SCHOOL.—Three Exhibits.

52. GYMPIE, TWO-MILE, STATE SCHOOL.—Thirty-three Exhibits.

53. IPSWICH, EAST, STATE SCHOOL.—Four Exhibits.

54. IPSWICH, MIDDLE, STATE SCHOOL (for Girls).—Eleven Exhibits.

55. IPSWICH, NEW TOWN, STATE SCHOOL.—Fifteen Exhibits.

56. IPSWICH, NORTH, STATE SCHOOL (for Boys).—Five Exhibits.

57. IPSWICH, NORTH, STATE SCHOOL (for Girls).—Sixteen Exhibits.

58. IPSWICH, RESERVE, STATE SCHOOL.—Six Exhibits.

59. MACKAY, NORTH, STATE SCHOOL.—Fourteen Exhibits.

60. MACKAY, TE KOWAI STATE SCHOOL.—Ten Exhibits.

61. MARYBOROUGH, CENTRAL, STATE SCHOOL (for Boys).—Eleven Exhibits.

62. MARYBOROUGH, CENTRAL, STATE SCHOOL (for Girls).—Sixty-nine Exhibits.

63. ROCKHAMPTON, CENTRAL, STATE SCHOOL (for Boys).—Four Exhibits.

64. ROCKHAMPTON, CENTRAL, STATE SCHOOL (for Girls).—Eighteen Exhibits.

65. TOOWOOMBA, NORTH, STATE SCHOOL.—Nine Exhibits.

66. TOOWOOMBA, SOUTH, STATE SCHOOL.—One Exhibit.

67. TOWNSVILLE, CENTRAL, STATE SCHOOL (for Boys).—Twelve Exhibits.

68. TOWNSVILLE, CENTRAL, STATE SCHOOL (for Girls).—Sixteen Exhibits.

69. WARWICK STATE SCHOOL.—Fourteen Exhibits.

Group III.—STATISTICS.

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70. ARCHIBALD, JOHN, Ravenswood.—Statistics of the Ravenswood Gold Field.

71. McARTHUR, ALEXANDER, Gladstone.—Statistics of the Gladstone Gold Field.

72. POST AND TELEGRAPH DEPARTMENT.—Comparative Statistics, 1862 and 1885.

73. QUEENSLAND COMMISSIONERS, Brisbane.—Sheet of General Statistics of Queensland.

74. SAMWELL, WILLIAM, Georgetown.—Treatise on the Etheridge Gold Field.

Group IV.—APPLICATION AND APPARATUS OF THE LIBERAL ARTS.

CLASS 11.—*Stationery and Artists' Materials.*

CLASS 12.—*Printing, Bookbinding, &c.*

75. BLACKMAN, F. A., Brisbane.

—(1) "Adventures in Queensland." (2) "Ronald Walton."

76. GORDON & GOTCH, Brisbane.—(1) Bailey's "Fern World." (2) Mrs. Foote's "Poems." (3) "Pugh's Almanac." (4) "Geography of Oceania." (5) "Slater's Almanac." (6) Coote's "History of Queensland," vol. i.

77. HOCKINGS, ALBERT JOHN, Brisbane.—(1) "Queensland Garden Manual." (2) "Flower Garden in Queensland."

78. QUEENSLAND COMMISSIONERS, Brisbane.—(1) Bailey's "Synopsis of the Queensland Flora." (2) Bailey's "Supplement to the Synopsis of the Queensland Flora." (3) Bailey's "Catalogue of Plants in the two Metropolitan Gardens." (4) Bernays's "Cultural Industries." (5) Boyd's "Old Colonials." (6) "Brisbane Directory." (7) Brunton Stephens's "Poems." (8) Donovan's "Catalogue of the Queensland Parliamentary Library." (9) Gregory's "Explorations." (10) Kerr's "Outlines of Australian History." (11) "Queensland: its Resources and Institutions" (a series of descriptive Essays on the Colony).

79. REGISTRAR OF BRANDS, Brisbane.—Two "Brands Directories for Queensland, for 1884."

80. WOODCOCK & POWELL, Brisbane.—Specimens of Printing.

81. THOMPSON, J. W., Brisbane.—"The Land Question."

CLASS 13.—*Musical Instruments.*

CLASS 14.—*Scientific Information.*

82. FISHER, HENRY EDWIN, Brisbane.—Universal (mean time) Sun-dial, or Settler's Clock; will, when correctly set and kept properly regulated according to the equation of time, show the mean time, within a fraction of a minute, at all seasons of the year.

READING ROOM.

The Reading Room will be supplied with files of the following newspapers and periodicals:—

Allora Guardian.
Border Post & Stannum Miner (Stanthorpe)
Brisbane Courier.
Bundaberg and Mount Perry Mail.
Bundaberg Star.
Cairns Chronicle.
Cairns Post.

Capricornian (Rockhampton).
Carpentaria Times (Normanton).
Charleville Times.
Christian Messenger (Brisbane).
Colonist (Maryborough).
Cooktown Courier.
Cooktown Independent.
Cunnamulla Express.
Dalby Herald.
Darling Downs Gazette (Toowoomba).
Evangelical Standard (Brisbane).
Gladstone Observer.
Gympie Miner.
Gympie Times.
Herberton Advertiser.
Hughenden Ensign.
Ipswich Advocate.
Journal of Commerce (Brisbane).
Logan Witness (Beenleigh).
Mackay Mercury.
Mackay Standard.
Maryborough Chronicle.
Morning Bulletin (Rockhampton).
Nord Australische Zeitung (Brisbane).
Northern Argus (Rockhampton).
Northern Miner (Charters Towers).
Northern Standard (Townsville).
North Rockhampton Times.
Observer (Brisbane).
Palmer Chronicle (Maytown).
Planter and Farmer (Brisbane).
Peak Downs Telegram.
Port Denison Times.
Port Douglas Chronicle.
Port Douglas Times.
Queenslander (Brisbane).
Queensland Figaro (Brisbane).
Queensland Good Templar (Brisbane).
Queensland Leader (Brisbane).
Queensland Mercantile Gazette (Brisbane).
Queensland Times (Ipswich).
Ravenswood Mining Journal.
Roma Free Press.
Sandgate Directory.
Southern World (Brisbane).
St. George Standard.
Telegraph (Brisbane).
Temperance Record (Brisbane).
Toowoomba Chronicle.
Towers Herald (Charters Towers).
Townsville Bulletin.
Townsville Herald.
Warwick Argus.
Warwick Examiner and Times.
Week (Brisbane).
Western Champion (Blackall).
Western Star (Roma).
Wide Bay and Burnett News (Maryboro').
Wild River Times (Herberton).
Winton Herald.

Group V.—SANITARY.

CLASS 15.—*Drugs and Medicine.*

83. BANCROFT, JOSEPH, M.D., Brisbane.—(1) Pepper Vine (*Piper novæ-hollandiæ*, Miq.) (2) Queensland Sassafras (*Nesodaphne obtusifolia*, Hook.) (3) Sweet Bark (*Achras laurifolia*, F. v. M.) (4) "Taj" Bark of India (*Cinnamomum Tamala*, Th. Nees.) (5) Tincture of *Duboisia Hopwoodii*, F. v. M. (Pituri). (6) Extract of *Erythroxylon australe*, F. v. M. A powerful astringent. (7) Extract of *Alstonia constricta*, F. v. M. Bitter bark, used as a strong tonic. (8) Duboisine, Alkaloid of *Duboisia myoporoides*, R. Br. Used in eye diseases. (9) Extract of *Sideroxylon laurifolium*, F. v. M. (Sweet bark). A sweet astringent, used in diarrhœa.

84. CLARKE, DAVID, Mary-borough.—Eucalyptus, *Alstonia constricta* (Queensland Fever-tree), and Toilet Preparations.

85. INGHAM, THOMAS, Rock-hampton.—Extract of *Euphorbia pilulifera*. The plant when dried and smoked is an anti-asthmatic.

86. QUEENSLAND COMMIS-sioners, Brisbane.—(1) *Duboisia Hopwoodii*, F. v. M. (Pituri). Used by the blacks like tobacco, as a stimulant or excitant before battle. (2) *Duboisia myoporoides*, R. Br. (3) *Alstonia constricta*, F. v. M. (Fever-bark). (4) Kamala.

CLASS 16.—*Surgical Instruments.*CLASS 17.—*Hospital Appliances.*CLASS 18.—*Other Objects connected with Health and Sanitation.*

87. WICKHAM, GEORGE J., South Toolburra.—Kangaroo Sinews, applicable as Sutures in surgical operations.

Group VI.—FURNITURE, AND OBJECTS FOR USE OR DECORATION OF DWELLING-HOUSES AND OTHER BUILDINGS.

CLASS 19.—*Furniture, Upholstery, and Household Appliances.*

88. COOKE, WILLM. DANIEL, District Engineer, Mackay Railway.—Inlaid Table of seventy-eight Specimens of Woods indigenous to Queensland.

89. FAIRLIE, JAMES, & SONS, Maryborough.—Red Cedar Door, polished. (2) White Cedar Door, varnished.

CLASS 20.—*Glass, Stone Utensils, Pottery, Porcelain, Earthenware.*CLASS 21.—*Hardware, Cutlery, &c.*

90. PENAL ESTABLISHMENT, St. Helena, Moreton Bay.—(1) Jack-shay. (2) Quart Pot. (3) Pint Pot. (4) Four-quart Billy. (5) Despatch Box. (6) Dust Pan. (7) Tin Plates. (8) Soup Can. (9) Mess Dish. (10) Oval Dish. (11) Oil Feeder. (12) Funnel. (13) Tin Chamber. (14) Tea-pot. (15) Washhand Basin. (16) Spittoon. (17) Half-round Billy. (18) Slop Pail. (19) Water Can. (20) Watering Pot. (21) Yard Lamp.

(22) Stable Lantern. (23) Candlestick. (24) Sugar Tin and Lid. (25) Small Galvanised Iron Tank. (26) Urine Tub. (27) Square Closet Tub. (28) Galvanised Iron Bucket. (29) Galvanised Iron Tub. (30) Galvanised Iron Tank Strainer. (31) Tea Bucket. (32) Scoop.—Manufactured for the Government Departments.

CLASS 22.—*Brushware and Basketware.*CLASS 23.—*Apparatus and Process for Cooling, Heating, and Lighting.*CLASS 24.—*Decorative Work.*CLASS 25.—*Marble, &c.*CLASS 26.—*Ornamental Work in Gold, Silver, and other metals.*

91. EDGAR, W. G. J., Rockhamp-ton.—Silver-mounted "Emu Egg" Inkstand.

92. QUEENSLAND COM-missioners, Brisbane.—Emu Eggs, mounted.

Group VII.—FABRICS, CLOTHING, TOILET REQUISITES, AND OTHER OBJECTS OF PERSONAL WEAR AND USE.

CLASS 27.—*Wool Fabrics.*

93. QUEENSLAND WOOLLEN MANUFACTURING COMPANY, Limited, Ipswich.—(1) Tweeds, five patterns. (2) Indigo Serge. (3) Blankets.

CLASS 28.—*Fancy Work.*CLASS 29.—*Apparel, Haberdashery.*

94. PENAL ESTABLISHMENT, St. Helena, Moreton Bay.—(1) Blue

Serge Frook, Queensland Defence Force Artillery. (2) Blue Serge Trousers, Queensland Defence Force Artillery. (3) Scarlet Serge Frook, Queensland Defence Force Artillery. (4) Dress Jumper, Border Customs. (5) Dress Riding Breeches, Border Customs. (6) Overcoat, Police. (7) Cloak, Mounted Police. (8) Overcoat, Warders. (9) Dress Suit, Chief Warders. (10) Undress Suit, Warders. (11) Dress Jacket, Water Police and Government steamer "Otter." (12) Dress Trousers, Water Police and Government steamer "Otter." (13) Undress Trousers, Water Police and Government steamer "Otter." (14) Serge Shirt, Water Police and Government steamer "Otter." (15) Blue Shirt, Water Police and Government steamer "Otter." (16) Serge Shirt, Government steamer "Otter." (17) Drill Shirt, Government steamer "Otter." (18) Dress Trousers, Goldfield Warden's Orderly. (19) Dress Jacket, Goldfield Warden's Orderly. (20) Undress Trousers, Goldfield Warden's Orderly. (21) Undress Jumper, Goldfield Warden's Orderly. (22) Dress Jumper, Native (Black) Police. (23) Dress Trousers, Native (Black) Police. (24) Undress Trousers, Native (Black) Police. (25) Undress Saddle Cloth, Electric Telegraph Department. (26) Dress Saddle Cloth, Electric Telegraph Messenger. (27) Tweed Coat, Benevolent Asylum. (28) Tweed Trousers, Benevolent Asylum. (29) Linen Coat, Asylum for Insane. (30) Strait Jacket, Asylum for Insane. (31) Moleskin Trousers, Government Institutions. (32) Moleskin Trousers, Prisoners. (33) Frieze Jacket, Prisoners. (34) Saddle Cloth, Native (Black) Police. (35) Duck Despatch Bag, Government House. (36) Tweed Hat, Discharged Prisoners. (37) Hammock, Penal Establishment.

CLASS 30.—Travelling Equipments, such as Trunks, Saddlery, &c,

95. FRIEND, HENRY, Senr., Gladstone.—Stockwhip Handles.

96. JARMAN, RICH'D. EDWD., Brisbane.—(1) Best Hogskin Saddle, with doeskin seat, knee and thigh pads. Australian coat of arms worked in seat, and trade mark (bucking horse) worked in flaps. (2) Hogskin Saddle, doeskin seat. (3) Best all-over Hogskin "Wagga Wagga" Saddle, fancy-capped knee-pads. (4) Best demi-Hogskin Park Saddle. (5) Best demi-Hogskin Training Saddle. (6) Best demi-Hogskin Roll-seat Stock Saddle. (7) Best all-over Bag-leather Roll-seat Somerset Breaking-in Saddle. (8) Best all-over Bag-leather Hogskin Seat, fancy-capped knee pads, "Wagga Wagga" Stock Saddle. (9) Best Hogskin Treeless Racing Saddle. (10) Set of Pair-horse best superfine Silver-mounted

Carriage Harness. (11) Set of Pair-horse best Silver-mounted Brown Leather "Concord" Buggy Harness.

97. LADE, N., Brisbane.—Solid Leather Travelling Trunk, "The Musgrave." (2) The "Vade Mecum" Solid Leather Travelling Trunk.

98. PENAL ESTABLISHMENT, St. Helena, Moreton Bay.—(1) Dress Saddle, Police Inspector. (2) Dress Saddle Pouch, Police Inspector. (3) Dress Breastplate, Police Inspector. (4) Dress Crupper, Police Inspector. (5) Dress Bridle, Mounted Police. (6) Leggings, Mounted Police. (7) Shoulder Belt and Pouch, Mounted Police. (8) Undress Breastplate, Mounted Police. (9) Sword Belt and Sling, Mounted Police. (10) Common Saddle, Native Police. (11) Snaffle Bridle, Native Police. (12) Leggings, Native Police. (13) Shoulder Belt and Pouch, Native Police. (14) Waist Belt and Pouch, Native Police. (15) Cartridge Loop Belt, Native Police. (16) Tomahawk Pouch and Belt, Native Police. (17) Handcuff Case, Native Police. (18) Leather Pack Bags, Government Departments. (19) Pack Saddle and Harness. (20) Canvas Pack Bags (small). (21) Canvas Pack Bags (large). (22) Gold Escort Bags. (23) Pack Surcingle. (24) Delivery Bag, Telegraph Messenger. (25) Saddle Bags, Telegraph Department. (26) Black Leggings, Town Police. (27) Handcuff Case, Town Police. (28) Riding Surcingle, Police. (29) Hand Bag, Government Departments. (30) Hobbles, Government Departments. (31) Revolver Pouch and Sling, Government Departments. (32) Head Stall, Government Departments. (33) Dee Strap, for Saddles. (34) Saddle Strap. (35) Cloak Strap, Mounted Police. (36) Muffs, Asylum for Insane. (37) Chair Strap, Asylum for Insane. (38) Cart Saddle. (39) Pair Winkers. (40) Cart Breeching. (41) Cart Breastplate. (42) Spring-cart Saddle. (43) Spring-cart Winkers. (44) Spring-cart Traces. (45) Spring-cart Breeching. (46) Sword Belt, Frog, and Pouch, Queensland Defence Force. (47) Despatch Bag, Police. (48) Waist Belt, Prisoners and Government Institutions. (49) Cadet Pouch and Belt, Queensland Cadets.

99. PURCELL, Wm., Rockhampton.—(1) Patent Saddle, with Girths, made for ordinary use, such as breaking-in horses, overlanding and station uses; and is said to have many advantages over the old style of stock-saddle. The outside covers are in two pieces instead of five (old style), and are not nailed to the tree, thus allowing for ventilation. The girths are screwed on to the tree, and the girths are crossed under the belly, thus preventing girth-galling, and obviating the necessity for a crupper. This mode of girthing enables the

rider to tighten or slacken girths without dismounting. The pad or pannel is buckled in front and laced-in behind, for convenience of repairing the tree, should any breakage occur; and should the pannel-hair get hard, or saturated with perspiration, it can easily be taken out, teased, and replaced. The saddle is very safe and easy on the horse's back, being cooler, stronger, and lighter than the ordinary stock-saddle. It is recommended as a military saddle. (2) Bag-leather Stock Saddle. (3) Gentleman's Town Hogskin Saddle.

100. QUEENSLAND COMMISSIONERS, Brisbane.—(1) Stockman's Whips, hand-made. (2) Hobbles—greenhide, &c. (3) Hide Halters. (4) Bullock Drivers' Whips, as used on cattle stations and in droving. (5) Lady's Riding Whip, hand-made. (6) Carriage Whips, hand-made.

CLASS 31.—Boots, Shoes, and Slippers.

101. PENALESTABLISHMENT, St. Helena, Moreton Bay.—(1) Dress Boots, Warders. (2) Undress Boots, Warders.

(3) Canvas Slippers, Warders. (4) Women's Boots, Nurses, Asylum for Insane. (5) Women's Boots, Prisoners. (6) Blucher Boots, Native Police. (7) Blucher Boots made on Iron Last, Prisoners. (8) Children's Boots, Reformatory Schools. (9) Moleskin Slippers, Prisoners.

CLASS 32.—Hats and Caps.

CLASS 33.—Jewellery and Precious Stones.

102. LOND, HERBERT WILLM., Torrington, Toowoomba.—(1) Opal Necklet, containing representative Stones from Exhibitor's Opal Mines. (2) Opal and "Opalite" Gems. (3) Opals in the matrix. (4) Opals worked in Cameos, &c.

103. HAMPTON, R. C. E., Thargomindah.—Opals in the matrix.

CLASS 34.—Perfumery.

CLASS 35.—Objects and Articles not otherwise specified.

Group VIII.—ANIMAL, VEGETABLE, AND MINERAL PRODUCTS (RAW AND MANUFACTURED).

(a) ANIMAL PRODUCTS.

CLASS 36.—Animal Oils.

104. QUEENSLAND COMMISSIONERS, Brisbane.—Dugong Oil, refined and unrefined.

105. HOGARTH AUSTRALIAN MEATPRESERVING CO., Limited, Oakley Creek, Darling Downs.—(1) Neatsfoot Oil. (2) Trotter Oil.

CLASS 37.—Soap, Tallow, Wax, and other Manufactures of Oleaginous Substances.

106. HANCOCK, WILLIAM, Ipswich.—Soap and Candles.

107. HOGARTH AUSTRALIAN MEATPRESERVING CO., Limited, Oakley Creek, Toowoomba.—(1) Mutton Tallow. (2) Beef Tallow.

108. QUEENSLAND COMMISSIONERS, Brisbane.—Beeswax, grown by Walter Bunney, Rosewood.

109. RUDELL, RICHARD, Bundaberg.—(1) Block of best No. 1 Soap. (2) Eight large bars of best No. 1 Soap.

CLASS 38.—Hides, Horns, Hair, &c.

110. BARTON, A. H. E., Stanthorpe.—Kangaroo Skin, tanned.

111. QUEENSLAND COMMISSIONERS, Brisbane.—(1) Dugong Hide, preserved and dried. (2) Dugong Hide, tanned.

CLASS 39.—Leather and Manufactures of Leather.

112. QUEENSLAND COMMISSIONERS, Brisbane.—Collection of Queensland Furs and Skins, prepared by L. WITTGENSTEIN, viz.:—(1) Six Wallaby Skins. (2) Six Mountain Wallaby. (3) Four Rock Wallaby. (4) One Scrub Wallaby, Leopard centre. (5) Six Wallaby Skins, dressed for boot leather. (6) Three Wallaby Skins, dressed for bookbinding. (7) Seven Seal Kangaroo. (8) Two Mainland Kangaroo. (9) Three Flyer Kangaroo. (10) Three Mountain Kangaroo. (11) One Kangaroo Head and Tail. (12) Six Wallaroo. (13) Three Dingo, or Native Dog. (14) Nine Opossum. (15) Two Opossum, tanned. (16) Two Black Opossum. (17) One Paddamelon. (18) Six Kangaroo Rat. (19) Five Black and White Native Cat. (20) Two Tiger Cat. (21) Twelve Native Bear. (22) Thirty-six Platypus. (23) Hunting Coat of Rock Wallaby and Stained Opossum. (24) Black Opossum Carriage Rug. Native Dog centre. (25) Gray and Black Opossum Buggy Rug, Black Opossum centre. (26) Blue Opossum Buggy Rug, Black border. (27) Kangaroo Hearthrug, Opossum border. (28) Black Opossum Hearthrug, Rabbit

border. (29) Wallaroo Hearthrug, Opossum-tail border. (30) Rock Wallaby Hearthrug. (31) Scrub Wallaby Hearthrug, Opossum border. (32) Blue Opossum Rug. (33) Mat (square), Black and White Native Cat. (34) Mat (square), Blue Opossum, Black border. (35) Mat (square), Rock Wallaby, Opossum and Rabbit border. (36) Mat (oval), Rock Wallaby, Opossum border. (37) Mat (oval), Black and White Native Cat centre. (38) Mat (oval), Feather centre. (39) Lady's Cape, Blue Opossum. (40) Lady's Cape, Rock Wallaby. (41) Lady's Cape, Young "Joeys" (Small Kangaroo). (42) Chair Mat, Black Opossum. (43) Three Footwarmers, Blue and Black Opossum and Native Cat. (44) Snooking Cap. (45) Pair of Gloves, Opossum Fur. (46) Twelve Chest-preservers. (47) Coloured Sheepskin Mat, and other small skins.

113. QUEENSLAND COMMISSIONERS, Brisbane.—Leathers, manufactured by A. PIECK, viz.—(1) Two sides Black Harness Leather. (2) Three sides Brown Harness Leather. (3) Three sides Stained Bridle Leather. (4) Two sides Brown Bridle Leather. (5) One side Black Rein Leather. (6) Three sides Brown Kip. (7) Four sides Satin Kip. (8) Three sides Black Kip. (9) Two Grained Kid Skins. (10) Two Kangaroo Skins. (11) Four Kangaroo Skins, in the russet. (12) Two French Calf Skins. (13) Three Satin Calf Skins. (14) Two Black Calf Skins. (15) Four Brown Calf Skins. (16) Two Native Bear Skins.

114. STEPHENS, WILLIAM, Brisbane.—(1) One side Sole Leather. (2) One side Harness Leather. (3) One side Bag and Bridle Leather. (4) Three Basils.

115. WICKHAM, GEORGE T., South Toolburra.—Opossum's Fur.

CLASS 40.—Silk—Raw, Cocoon, and Thread.

116. GIBSON, MISS, Stanmore, Yatala.—Skeins and Cocoons.

117. QUEENSLAND COMMISSIONERS, Brisbane.—Raw and Cocoon, Bengal variety of Worm. Grown by Edward Carrington, Upper Coomera.

CLASS 41.—Tortoise Shells, Sponge, and Shells.

118.—BROWN, FRANK (Care of W. R. Humphrey, Cooktown).—Trophy of Marine Shells.

119. CLARK, JAMES, Thursday Island.—Clam Shells.

120.—HARTMANN, CARL H., F.R.H.S., Toowoomba.—Sponge Coral, Flexible Coral, Spongesfans, &c., from Torres Straits.

121. QUEENSLAND COMMISSIONERS, Brisbane.—Shells, Corals, &c., from Torres Straits.

CLASS 42.—Pearl Shell.

122. QUEENSLAND COMMISSIONERS, Brisbane.—Pearl-shell—"Chicken," small and large "Bold-shell." Trophy.

(b) VEGETABLE PRODUCTS.

CLASS 43.—Indigenous Timber and other Forest Products.—Queensland Commissioners' Exhibit.—Printed as a separate Catalogue.

CLASS 43A.—Private Exhibits of Indigenous Timber and other Forest Products.

123. ADAMS, CHARLES E., Goondi Plantation, North Queensland.—Collection of Woods indigenous to the Johnstone River district, including—(1) Lemonwood. (2) Spurwood. (3) Cedar. (4) Pencil Cedar. (5) Beefwood. (6) Bean-tree. (7) Johnstone River Hardwood. (8) Silky Oak. (9) White Ash. (10) Fig-tree.

124. BROWN, JOHN, Mackay.—Obelisk, constructed of 2,000 pieces of woods indigenous to Queensland, collected in the Mackay district.

125. BURGESS, ISAAC, Mellum Creek.—Two logs of Cedar, grown on the Blackall Range, Moreton district; one 12 feet 10 inches long and 20 feet 5 inches in girth; the other 12 feet 7 inches long and 18 feet 8 inches in girth.

126. COWLEY, JOSEPH L., Upper North Pine River.—Arrowroot Plant.

127. FAIRLIE, JAMES, & SON, Maryborough.—Cedar Plank.

128. FRIEND, HENRY, Senr., Gladstone.—Collection of Woods indigenous to the Gladstone district.

129. JACKSON, J. W. W., & CO., Mitchell, Maranoa District.—(1) Piece of Bloodwood, 15 feet long, 22 inches wide, and 7 inches deep; suitable for railway purposes. Durable underground. (2) Piece of Cypress Pine, 14 feet long, 18 inches wide, and 5 inches thick; takes a beautiful polish, and is proof against the ravages of the white ant.

130. HARTMANN, CARL H., F.R.H.S., Toowoomba.—Cone of Bunya Bunya Pine (*Araucaria Bidwillii*).

131. LANE, ROBERT, Brisbane.—Cone of Bunya Bunya Pine (*Araucaria Bidwillii*).

132. NORVILL, EDWARD, Gladstone.—Paper Knives of Beefwood.

133. QUEENSLAND COLLIERIES CO., Limited, Howard.—Polished Woods.

133a. QUEENSLAND COMMISSIONERS.—Collection of Walking Sticks.

134. STRÜVER F., Pine Creek, Toowoomba.—Sample boards of Cypress Pine.

CLASS 44.—Vegetable Oils.

135. QUEENSLAND COMMISSIONERS, Brisbane.—Collection of Essential Oils, prepared by the Hon. A. C. GREGORY, C.M.G., and Mr. K. T. STAIGER, viz.:—(1) Essential Oil of *Melaleuca leucadendron*, Linn., var. *lanceifolia*; specific gravity, 0.917 at temperature of 60 degrees F. 320 ounces of oil were obtained from one ton of leaves. (2) Essential Oil of *Eucalyptus Staigeriana*, F.v.M.; specific gravity, 0.881 at 72 degrees F. 1,200 ounces of oil were obtained from one ton of leaves. (3) Essential Oil of *Eucalyptus microcorys*, F.v.M.; specific gravity, 0.896 at 60 degrees F. 375 ounces of oil were obtained from one ton of leaves. (4) Essential Oil of *Eucalyptus Planchoniana*, F.v.M.; specific gravity, 0.915 at 60 degrees F. (5) Essential Oil of *Eucalyptus Baileyana*, F.v.M.; specific gravity, 0.890 at 60 degrees F. (6) Essential Oil of *Eucalyptus hamastoma*, Sm.; specific gravity 0.880 at 60 degrees F. 672 ounces of oil were obtained from one ton of leaves. (7) Essential oil of *Eucalyptus dealbata*, A. Cunn.; specific gravity, 0.871 at 72 degrees F. (8) Essential Oil of *Eucalyptus maculata*, Hook.; specific gravity, 0.891 at 72 degrees F. (9) Essential Oil of *Eucalyptus maculata*, var. *citriodora*; specific gravity, 0.892 at 72 degrees F. (10) Essential Oil of *Eucalyptus populifolia*, Hook. (11) Essential Oil of *Backhousia citriodora*, F.v.M.; specific gravity at 72 degrees F., 0.887. (12) Oil of *Calophyllum inophyllum*, Linn.; useful for varnishes, soap-making, &c. (13) Oil of *Aleurites molleucana* (Willd.), or Candle Nut; used extensively in oil-painting as a substitute for walnut oil. The kernel of the nut produces 54.3 per cent. of oil, and 45.7 per cent. of amylaceous and nitrogenous substance. (14) Essential Oil of *Beilschmiedia obtusifolia*, Benth. (Sassafras bark); specific gravity, 0.978 at 72 degrees F. 770 ounces of oil were obtained from one ton of leaves.

CLASS 45.—Fibres, and Articles Manufactured therefrom.

136. FORSYTH, A., & CO., Brisbane.—Rope Trophy, consisting of—(1) Manila Rope. (2) Manila Clothes Line. (3) Log and Lead Lines. (4) Lanyard. (5) Ratline. (6) Signal Halyard. (7) Coir Rope. (8) Hambro' Line. (9) Marline. (10) Houseline. (11) New Zealand Flax Rope. (12) Engine Packing.

137. QUEENSLAND COMMISSIONERS, Brisbane.—FIBRES, grown near Brisbane, prepared by Alexander MacPherson, viz.:—(1) *Corchorus capsularis* (Jute). (2) *Corchorus olitorius* (Jute). [Note a.] (3) *Hibiscus sabbdariffa* (Rosella). [Note b.] (4) *Hibiscus heterophyllus* (Currajong). (5) *Hibiscus tiliaceus*. (6) *Hibiscus rosa-sinensis*. (7) *Hibiscus splendens*. (8) *Licuala Muelleri* (Fan Palm). (9) *Saguerus Rumphii* (Palm). [Note c.] (10) *Caryota urens* (Palm). (11) *Chamerops fortunea* (Palm). (12) *Ptychosperma* (Palm). (13) *Ruffia Rumphii*. (14) *Chamerops excelsa*. (15) *Billbergia clavata* (Bowstring Hemp). (16) *Billbergia maculata*. (17) *Pandanus utilis*. [Note d.] (18) *Pandanus spiralis*. (19) *Pandanus pedunculatus* (locally called Bread Fruit). (20) *Yucca aloifolia* (Adam's Needle). (21) *Yucca filamentosa* (Adam's Needle and Thread). (22) *Yucca aloifolia variegata*. (23) *Yucca variegata*. (24) *Yucca recurva*. (25) *Yucca gloriosa*. (26) *Agave americana* (American Aloe). (27) *Agave americana variegata*. (28) *Agave longifolia*. (29) *Agave*, var. A. (30) *Agave*, var. B. (31) *Agave*, var. C. (32) *Fourcroya gigantea* (Stinking Aloe). (33) *Dracana draco* (Dragon's Blood). (34) *Sterculia rupestris* (Bottle-tree). (35) *Sterculia lurida*. (36) *Commersonia echinata*. (37) *Acacia Cunninghamii* (Black Wattle). (38) *Linum usitatissimum* (Flax). (39) *Ananassa sativa* (Wild Pineapple). (40) *Bambusa arundinacea* (Bambo). (41) *Ficus macrophylla* (Moreton Bay Fig). (42) *Ficus rubiginosa*. (43) *Malvastrum tricuspidatum*. (44) *Sida retusa* (*Sida rhombifolia*). [Note e.] (45) *Tristania suaveolens* (Swamp Mat.ogany). (46) *Corchorus capsularis* (plant dried, with fibre). (47) *Corchorus olitorius* (plant dried, with fibre). (48) Jute, dyed. (49) *Sida retusa*, dyed. (50) *Rosella hemp*, dyed. (51) Fibre from Tropical Queensland (name not known).

NOTE.—(a) On the alluvial soil of the banks of the Brisbane River Jute grows to a height of 14 feet, and on forest land to a height of 11 feet, without manure. The seed was sown during the second week of October, and fibre and seed matured during the first week of the following April.

(b) *Hibiscus sabbdariffa* (Rosella) produces a very strong durable fibre. The sample (A) exhibited was converted into fibre by leaving the plants exposed to the weather for five months. Sample (B) was immersed in mud and water for six months. The seeds of this

plant are sown in September, and gathered in an unripe state in the following April. A delicious jam is made from the Rosella.

(e) *Saguerus Rumphii* grows to perfection near Brisbane. The fibres obtained from the Palms shown are suitable for upholstery purposes, and for the manufacture of ropes, brushes, &c.

(d) The fronds of the *Pandanus utilis* are used for making sugar-bags. A good fibre is produced from the woody portion of its roots.

(e) *Sida retusa* grows as a common weed.

CLASS 46.—Materials for Basket, Wicker, and Plait Work.

CLASS 47.—Building Materials.

CLASS 48.—Starch and Farinaceous Products.

CLASS 49.—Gums, Resins, Vegetable Dyes, Varnishes.

138. BAILEY, FREDERICK MANSON, F.L.S., Colonial Botanist, Brisbane.—Gum of Apple-tree (*Angophora Woodsiana*, Bail.) (2) Gum of Rusty Gum (*Angophora lanceolata*, Cav.) (3) Gum of Ironbark (*Eucalyptus siderophloia*, Benth.) Specific gravity at 72 degrees, 1.413; kino-tannin, 72.13 per cent. Perfectly soluble in water. (4) Gum of Scribbly Gum (*Eucalyptus hamastoma*, Sm.) Specific gravity at 72 degrees, 1.378; kino-tannin, 64.51 per cent. (5) Gum of Stringybark (*Eucalyptus acmenioides*, Schau.) (6) Gum of Turpentine or Tee (*Eucalyptus microcorys*, F.v.M.) Specific gravity at 72 degrees, 1.395; kino-tannin, 53.33 per cent. (7) Gum of Gum-topped Box (*Eucalyptus hemiphloia*, F.v.M.) (8) Gum of Jimmy Low (*Eucalyptus resinifera*, Sm.) Specific gravity, 1.416; kino-tannin, 65.57 per cent. (9) Gum of Spotted Gum (*Eucalyptus maculata*, Hook.) Specific gravity at 72 degrees, 1.405; kino-tannin, 34.97 per cent. The analysis also showed the presence of 59.03 per cent. of substance insoluble in water; alcohol dissolved, 10.82 per cent., leaving 48.21 per cent., which was mostly soluble in caustic soda. This insoluble substance was intensely black, and was partly derived from altered kino-tannin, and partly from other substances not yet thoroughly investigated. (10) Gum of Moreton Bay Ash (*Eucalyptus tessellaris*, F.v.M.) (11) Gum of Rough Stringybark (*Eucalyptus Baileyana*, F.v.M.) (12) Gum of Narrow-leaved Ironbark (*Eucalyptus crebra*, F.v.M.)

139. BANCROFT, JOSEPH, M.D., Brisbane.—(1) Purified Gum of *Eucalyptus corymbosa*, Sm. (Bloodwood). (2) Purified Gum of *Eucalyptus siderophloia*, Benth. (Ironbark). (5) Purified Gum of *Eucalyptus side-*

rophloia, var. *rostrata* (Papery Ironbark). (4) Purified Gum of *Eucalyptus hamastoma*, Sm. (Scribbly Gum).

140. NORVILL, EDWARD, Gladstone.—Assortment of Gums.

141. SWAIN, JOHN WILLIAM COWLING, Brisbane.—Skeins of Worsted Yarn, dyed Yellow and Scarlet. Dyes extracted from native woods.

142. WICKHAM, GEORGE J., South Toolburra.—Grass-tree Gum.

CLASS 50.—Tobacco, Raw and Manufactured.

143. HOCKER, J. H., Brisbane.—Queensland-grown Tobacco, raw and manufactured.

144. TYREL, Mrs. J. DE POIX, Stanthorpe.—Tobacco Leaf.

CLASS 51.—Materials used for Tanning, Currying, &c.

145. LOCAL COMMITTEE, Stanthorpe.—Tanning Barks, comprising:—(1) Mountain Green Wattle. (2) Scrub Wattle. (3) Silver Wattle. (4) Golden-leaf Wattle. (5) Swamp Green Wattle. (6) Green Wattle.

146. QUEENSLAND COMMISSIONERS, Brisbane.—Tanning Barks, viz.:—(1) Bark of Brisbane Box (*Tristania conferta*, R. Br.) (2) Bark of Turpentine or Tee (*Eucalyptus microcorys*, F.v.M.) (3) Bark of Black Wattle (*Acacia Cunninghamii*, Hook.) Analysis: Tannin, 9.13 per cent.; extract, 16.15 per cent.; dry residue of exhausted material, 74.72 per cent.; total, 100. (4) Bark of Gum-topped Box (*Eucalyptus hemiphloia*, F.v.M.) (5) Bark of Hickory Wattle (*Acacia aulococarpa*, A. Cunn.) (6) Bark of Ironbark (*Eucalyptus siderophloia*, Benth.) (7) Bark of Oak (*Casuarina suberosa*, Ott. et Dietr.) (8) Bark of Honeysuckle (*Banksia integrifolia*, Linn.) (9) Bark of Bitterbark (*Petalostigma quadriculare*, F.v.M.) (10) Bark of Rough Stringybark (*Eucalyptus Baileyana*, F.v.M.) (11) Bark of Scribbly Gum (*Eucalyptus hamastoma*, Sm.) (12) Bark of Stringybark (*Eucalyptus acmenioides*, Schau.) (13) Bark of Red Ash (*Alphitonia excelsa*, Reissek.) (14) Bark of Wattle (*Acacia penninervis*, Sieb.) Analysis: Tannin, 14.49 per cent.; extract, 33.06 per cent.; dry residue of exhausted material, 52.45 per cent.; total, 100. (15) Bark of Silver Wattle (*Acacia podalyriaefolia*, A. Cunn.) Analysis: Tannin, 12.40 per cent.; extract, 29.50 per cent.; dry residue of exhausted material, 58.10 per cent.; total, 100. (16) Bark of Green Wattle (*Acacia decurrens*,

Willd.) Analysis: Tannin, 15·08 per cent.; extract, 26·78 per cent.; dry residue of exhausted material, 58·14 per cent.; total, 100. (17) Bark of Black Wattle (*Acacia nerifolia*, A. Cunn.) Analysis: Tannin, 13·91 per cent.; extract, 17·87 per cent.; dry residue of exhausted material, 68·22 per cent.; total, 100.

CLASS 52.—Other Products and Manufactures not specified.

(c) MINERALS AND MINERAL PRODUCTS.

CLASSES 53 TO 58.—Printed as a separate Catalogue.

Group IX.—MACHINERY AND IMPLEMENTS.

CLASS 59.—Means of Transport, Appliances, and Processes used in the Common Arts and Industries, including Models and Designs.

Group X.—FOOD PRODUCTS (RAW AND MANUFACTURED).

CLASS 60.—Tea, Coffee, Spices, &c.

147. **BAILEY, WILLIAM B.,** Pimpama.—Coffee Beans.

148. **BURNETT, J. K.,** Buderim Mountain, Mooloolah.—Coffee.

149. **CHUBB, CHAS. FREDK.,** Ipswich.—(1) Coffee. (2) Cayenne Pepper, from birds-eye chilies.

150. **COSTELLO, J. M.,** Millicent Plantation, Mackay.—(1) Coffee, from Beans of the year 1884. (2) Coffee Beans, of the year 1885.

151. **GIBSON, MISS,** Stanmore, Yatala.—Coffee, husked and unhusked.

152. **HART, DANIEL,** Mossman River.—Coffee, raw, and prepared for use.

153. **PENAL ESTABLISHMENT,** St. Helena, Moreton Bay.—Coffee, green, roasted, and ground.

154. **QUEENSLAND COMMISSIONERS,** Brisbane.—Coffee, grown by Joseph G. Dixon, Buderim Mountain.

CLASS 61.—Sugar.

A.—NORTHERN DISTRICT.

155. **SWALLOW & DERHAM,** Hambleton Plantation, Cairns.—(1) Sugar; S. and D., No. 1, three-star class. (2) Sugar; S. and D., No. 2, three-star class.

B.—JOHNSTONE RIVER DISTRICT.

156. **MOURILYAN SUGAR CO.,** Mourilyan Harbour.—(1) Sugar, half-a-ton, A star class. (2) Sugar, half-a-ton, A class.

157. **NOLAN & WARLISS,** Innisfail Plantation, Johnstone River.—(1) Sugars made from third ratoon "Meera" cane, by old open five-flat battery; small vacuum pan; lime and sulphur process; No. 1 harp class. (2) Sugars made from third ratoon "Meera" cane, by old open five-flat battery; small vacuum pan; lime and sulphur process; No. 2 harp class.

158. **QUEENSLAND SUGAR CO. Limited,** Geraldton.—Samples of Sugar.

C.—HERBERT AND BURDEKIN RIVERS.

159. **COLONIAL SUGAR REFINING CO. OF SYDNEY,** Victoria Plantation, Herbert River.—Cane Sugar, prepared for Refining purposes only.

160. **GAIRLOCH SUGAR CO.,** Gairloch Plantation, Lower Herbert River.—Sugar—A Class.

161. **HAMLEIGH SUGAR CO., Limited,** Hamleigh, Ingham, Lower Herbert.—(1) Crystals Sugar; No. 26 H.S.C. class; made by the Icery, Ehrmann, and Bernard process. (2) Medium-grain White Sugar; No. 27 H.S.C. class; made by the Icery, Ehrmann, and Bernard process. (3) First Molasses Sugar; A8 H.S.C. class; made by the Icery, Ehrmann, and Bernard process.

162. **MACKENZIE, JAMES,** Seaforth Plantation, Lower Burdekin.—(1) Medium-grain White Sugar, made by the Icery, Ehrmann, and Bernard process, vacuum pan; Seaforth A class. (2) Medium Yellow (seconds) Sugar; made by the Icery, Ehrmann, and Bernard process; Seaforth B class.

163. **WOOD BROTHERS & BOYD,** Ripple Creek Estate, Herbert River.—Unrefined Vacuum-pan Sugar.

D.—MACKAY DISTRICT.

164. **ADRIAN, W. S. D.,** Mount Pleasant Plantation, Mackay.—White, unrefined, Vacuum-pan Sugar.

165. **HENDERSON, A., & Co.,** Beaconsfield Plantation, Mackay.—White Vacuum-pan Sugar.

166. **MACKAY CO-OPERATIVE CO.,** Mackay.—Fifteen samples of Sugar, being the prize exhibit of the Mercantile Collection of Sugars at the Mackay Agricultural Show, 1885.

167. McBRYDE, JOHN, Richmond Plantation, Mackay.—(1) White Sugar, animal charcoal process. (2) Seconds Sugar, animal charcoal process.

168. McCREADY, HENRY, Palmyra Estate, Mackay.—Six samples of Sugar.

169. MELBOURNE - MACKAY SUGAR CO., Palms Plantation, Mackay.—Collection of six varieties of Cane Sugar, made by the Icery, Ehrmann, and Bernard process of clarification (phosphoric acid).

170. PAGET BROTHERS, Nindaroo Estate, Mackay.—(1) Straw-coloured Counter Sugar, manufactured by the common lime process; Nindaroo D class, firsts. (2) Yellow Crystal Sugar, manufactured by the common lime process; Nindaroo DD class, firsts. (3) Straw-coloured Crystal Sugar, manufactured by the common lime process; Nindaroo DDD class, firsts. (4) Straw-coloured Counter Sugar, manufactured by the common lime process; Nindaroo E class, seconds. (5) Yellow Sugar, manufactured by the common lime process; Nindaroo F class, thirds. (6) Brown Sugar, manufactured by the common lime process; Nindaroo G class, fourths.

E.—ROCKHAMPTON DISTRICT.

171. QUEENSLAND COMMISSIONERS, Brisbane.—(1) Counter Sugar, manufactured by the Yeppoon Sugar Co., BBB class; grown in Central Queensland—a dry belt. (2) Counter Sugar, manufactured by the Yeppoon Sugar Co., BB1 class; grown in Central Queensland—a dry belt.

172. YEPPOON SUGAR CO., Limited, Rockhampton.—White Sugar, A1 class, grown in Central Queensland—a dry belt.

F.—BUNDABERG DISTRICT.

173. ADAMS, WALTER, Bundaberg.—Sugar manufactured by the common process.

174. CRAN, ROBERT, & CO., Millaquin, Bundaberg.—(1) Refined Sugar; Millaquin 2. (2) Refined White Sugar; Millaquin A. (3) One ton large-grained Refined Sugar.

175. PENNY & CO., Millbank Plantation, Bundaberg.—(1) White Sugar, manufactured by the Icery, Ehrmann, and Bernard process; Millbank A class. (2) White Sugar, manufactured by the Icery, Ehrmann, and Bernard process; Millbank 1 class. (3) Yellow Sugar, made from the molasses from first sugar; Millbank 2 class.

176. QUEENSLAND COMMISSIONERS, Brisbane.—(1) White Sugar,

manufactured by Penny & Co., Millbank Plantation. (2) Yellow Sugar, manufactured by Penny & Co., Millbank Plantation. (3) Granulated White Sugar; Fairymead 1 class; manufactured by A. H. & E. Young. (4) Brown Sugar, manufactured by A. H. & E. Young, Fairymead Plantation; Fairymead 3 class.

177. YOUNG, A. H. & E., Fairymead Plantation, Bundaberg.—(1) Sugar, manufactured by the Icery, Ehrmann, and Bernard process, without charcoal; firsts, L1 class. (2) Sugar, manufactured by the Icery, Ehrmann, and Bernard process, without charcoal; seconds, L2 class.

G.—MARYBOROUGH DISTRICT.

178. CRAN, ROBERT, & CO., Yengarie.—One ton Refined Grocers' Sugar.

H.—SOUTHERN DISTRICT.

179. DAVY & GOODING, Beenleigh.—Vacuum-pan unrefined Sugar.

180. PENAL ESTABLISHMENT, St. Helena, Moreton Bay.—Sugar manufactured by the open-pan process.

181. QUEENSLAND COMMISSIONERS.—(1) Vacuum-pan unrefined Sugar manufactured by Buderim Mountain Sugar Co., Limited, Mooloolah. (2) Sugar from Cane Juice, filtered through animal charcoal, manufactured by Arthur A. Robinson, Helensvale Plantation, Coomera River. (3) First Sugar, manufactured by Alexander Watt, Bannockburn Plantation, Beenleigh, by the open-pan process, lime only being used in manufacture; B1 class. (4) Molasses Sugar, manufactured by the open-pan lime process, by Alexander Watt, Bannockburn Plantation, Beenleigh; B2 class.

182. SMITH, THOMAS LORIMER, Woodlands Plantation, Marburg.—Sugar.

Analysis: Co-efficient	...	99.63
Moisture	...	37
		100.00

183. WITTY, W. K., Yatala, Brisbane.—Sugars.

CLASS 62.—Breadstuffs.

NOTE.—In consequence of the severe drought prevailing throughout the whole of the year, none of the cereals, &c., are fair specimens of the agricultural produce of the colony.

184. ALFORD, HENRY KING, Allora, Darling Downs.—(1) Wheat, sample A. (2) Wheat, sample B.

185. DOUGALL, JAMES, Allora, Darling Downs.—Flour.

186. GIETZ, ADAM, Allora.—Wheat.

187. HAYES, W. & C., Warwick.—(1) White Tuscan Wheat, grown on the Darling Downs. (2) White Lammas Wheat, grown on the Darling Downs. (3) Spring Wheat, grown on the Darling Downs. (4) Hybridised Wheat, grown on the Darling Downs. (5) Defiance Wheat, rust-proof, Indian variety, grown on the Darling Downs. (6) Flour, manufactured by the steel-roller process from Darling Downs Wheat.

188. HENDERSON, JAMES, Tambourine, Beenleigh.—Wheat.

189. HORWITZ, J., & CO., Warwick, Darling Downs.—(1) Flour, two samples. (2) Wheaten Meal. (3) Maize Meal. (4) Maize. (5) Wheat.

190. JOHNSON, JOHN P., Daintree River, North Queensland.—Potato Flour.

191. KENNEDY, DAVID, Allora, Darling Downs.—Wheat.

192. KENNEDY, JAMES C., Allora, Darling Downs.—Wheat, grown on rich black soil, 7 feet deep, yielding from 25 to 40 bushels per acre.

193. KENNEDY BROTHERS, Steam Flour Mills, Allora.—Superfine Flour, manufactured from same description of wheat as the two preceding exhibits; ground with 48-in. French Burns.

194. STEWART, JAMES, Bald Hills.—Indian Wheats.

CLASS 63.—*Arrowroot, Tapioca, Sago, Rice, &c.*

195. BAIRD, JAMES C., Cooktown.—Rice grown on the Endeavour River.

196. COWLEY, JOSEPH L., Upper North Pine River.—Arrowroot.

197. DOHERTY, WILLIAM, Pimpama.—Arrowroot.

198. HART, DANIEL, Mossman River.—(1) Arrowroot. (2) Rice.

199. LAHEY, F., & SONS, Pimpama.—Purple Arrowroot.

200. LAHRS, CLAUS, Yatala.—Two varieties of Rice.

201. MILLS, GEORGE, Nerang.—Arrowroot.

202. PENAESTABLISHMENT, St. Helena, Moreton Bay.—Arrowroot.

203. WILLIAMS, ALFRED, Eight-Mile Plains, Brisbane.—Cassava.

CLASS 64.—*Butter, Cheese, &c.*

CLASS 65.—*Preserved Meats, Soups, &c.*

204. CENTRAL (The) QUEENSLAND MEAT EXPORT CO., Limited, Rockhampton.—(1) Fitzroy Luncheon Beef—Rounds and Sirloin. (2) Luncheon Tongues—Smoked and Corned. (3) Sandwich Beef—Compressed. (4) Compressed Corn Beef. (5) Corned Beef. (6) Compressed Beef Brawn. (7) Boiled Beef. (8) Compressed Boiled Beef. (9) Rump Steak and Onions. (10) Minced Collops. (11) Ox Marrow. (12) Roast Beef. (13) Boiled Mutton. (14) Corned Mutton. (15) Compressed Mutton. (16) Concentrated Beef Tea. (17) Liebig's Extract of Meat. (18) Boiled Beef. (19) Corned Beef. (20) Boiled Mutton. [18, 19, and 20 are specimens of inferior Meat packed in America and labelled in England, purporting to be Queensland Beef and Mutton.]

205. HOGARTH AUSTRALIAN MEAT PRESERVING CO., Limited, Oakey Creek, Darling Downs.—(1) Compressed Boiled Beef. (2) Compressed Corned Beef. (3) Compressed Boiled Mutton. (4) Boiled Mutton. (5) Corned Mutton. (6) Boiled Beef. (7) Corned Beef. (8) Stewed Ox Tails. (9) Ox Tongues. (10) Sheep's Tongues. (11) Stewed Sheep's Kidneys. (12) Sheep's Kidney Soup. (13) Tripe. (14) Potted Ox-Head. (15) Ox-Tail Soup. (16) Stewed Ox-Kidney Soup. (17) Ox-Kidney Soup. (18) Beef Marrow. (19) Beef Jelly.

206. QUEENSLAND COMMISSIONERS, Brisbane.—Dugong Bacon.

207. QUEENSLAND COMMISSIONERS.—Meats, Soups, &c., prepared by B. SKINNER, Brisbane, viz.:—(1) Turtle Soup. (2) Turtle for invalids. (3) Turtle Jelly. (4) Stewed Turtle. (5) Bêche-de-mer Soup. (6) Potted Dugong.

CLASS 66.—*Fish—Fresh and Preserved.*

208. BAIRD, JAMES C., Cooktown.—Bêche-de-mer:—(1) Teat Fish. (2) Black Fish. (3) Red Fish. (4) Prickly Red Fish.

CLASS 67.—*Fruit and Vegetables—Fresh and Preserved.*

209. HARDY, CHARLES, Eight-mile Plains, Brisbane.—(1) Ginger, preserved. (2) Cumquats, preserved.

210. QUEENSLAND COMMISSIONERS, Brisbane.—Queensland Fruit, preserved by B. SKINNER, viz.:—(1) Pineapple. (2) Pineapple Pulp. (3) Guava. (4) Cape Gooseberry.

CLASS 68.—*Confectionery.*CLASS 69.—*Jams and Jellies.*

211. HARDY, CHARLES, Eight-mile Plains, Brisbane.—(1) Rosella Jam. (2) Pie Melon Jam. (3) Yellow Tomato Jam. (4) Red Tomato Jam. (5) Peach Jam. (6) Apricot Jam. (7) Pineapple Jam. (8) Grape Jam. (9) Cape Gooseberry Jam. (10) Passion Fruit and Tomato Jam. (11) China Date-Plum Jam. (12) Wild Gooseberry Jam. (13) Cherry Jam. (14) Damson Jam. (15) Greengage Jam. (16) Loquat Jam. (17) Orange Marmalade. (18) Cumquat Marmalade. (19) Citron Marmalade. (20) Lemon Marmalade. (21) Lisbon Lemon Marmalade. (22) Shaddock Marmalade. (23) Rosella Jelly. (24) Apple Jelly. (25) Orange Jelly. (26) Grape Jelly. (27) Passion Fruit Jelly. (28) Yellow Tomato Jelly. (29) Red Tomato Jelly.

212. QUEENSLAND COMMISSIONERS, Brisbane.—Jams prepared by B. SKINNER:—(1) Citron Jam. (2) Pineapple Jam. (3) Guava Jam. (4) Loquat Jam. (5) Cape Gooseberry Jam.

213. QUEENSLAND COMMISSIONERS, Brisbane.—Ginger, preserved by McLEOD & WILLS.

CLASS 70.—*Honey.*

214. CRIBB, ROBERT JOSEPH, Milton, Brisbane.—One cwt. of best Eucalypt Honey. Extracted, and in the Comb.

CLASS 71.—*Essences and Extracts.*CLASS 72.—*Pickles, Sauces, &c.*

215. HARDY, CHARLES, Eight-mile Plains, Brisbane.—(1) Mango Pickle. (2) Mango Chutney. (3) Red Cabbage. (4) Peach Chutney. (5) Tomato Chutney. (6) Tomato Sauce. (7) Tomato Pickle. (8) Cucumber Pickle.

CLASS 73.—*Ale, Beer, and Porter.*

216. MCKAY, B., Mackay.—Bottled Ale.

217. STEINDL & FLEMING, City Brewery, Bundaberg.—(1) Ale and Stout, in cask. (2) Bottled Ale and Stout.

218. TOWNSVILLE BREWERY CO., Limited, Townsville.—Bottled Stout and Ale.

CLASS 74.—*Wines.*

219. BASSETT, S. S., Roma.—(1) Sherry, in case, 3 years old. (2) Hermitage. (3) Burgundy. (4) Reissling. (5) Sherry, in bottle.

220. BEH, DAVID, Summithill Vineyard, Toowoomba.—(1) White light table Wine, "Shepherd's Reising." Age of vine, 5 years; trained on vine sticks; vintage, March, 1885; soil, red volcanic, trenched 2 feet deep. (2) Red table Wine, from Black Spanish and Isabella vines—mixed. Age of vine, 6 years; trained on vine sticks; vintage, March, 1885; soil, red volcanic, trenched 2 feet deep.

221. BENSLEY, MARK, Grange Farm Vineyard, Rosewood, Ipswich.—(1) Light dry "Red Salvino." Age of vine, 2 years; soil, chocolate; hand-cultivated on trellis; vintage, 1880. (2) Full-bodied sweet Wine, "Red Hermitage." Age of vine, 3 years; hand-cultivated on trellis; vintage, 1880; soil, chocolate.

222. BISHOP, D. S., Newton Vineyard, Southport.—Sweet Red Wine, from "Isabella" grape. Age of vine, 6 years; hand-trained on wire; northern aspect. Vintage, 1882; soil, red loamy clay.

223. CHUBB, CHAS. F., & CO., Malmesbury Vineyard, Ipswich.—Dry Red "Malmesbury." Age of vine, 4 years. Espar vine, trained by hand on trellis on three wires strained; vintage, 1879; soil, alluvial black, with limestone.

224. DICK, JAMES, Reside Vineyard, Ipswich.—(1) Red Wine, "Reside." Espar vine. Age of vine, 6 years; cultivated by horse and hand labour, and trained on trellis and three wires; vintage, 1883; soil, brown loam. (2) Sweet White Wine, "Reside." White Schiraz and White Uli vine. Age of vine, 4 years; cultivated by horse and hand labour, and trained on trellis and three wires; vintage, 1883; soil, brown loam.

225. HERZER, HENRY, Saxony Gardens, Toowoomba.—(1) White, light table Wine, "Salvino." Age of vine, 4 years; cultivated by hand, on stakes; vintage, 1883; soil, heavy red. (2) Table Wine, "Red Spanish." Black Spanish vine; age of vine, 3 years; cultivated by hand on stakes; vintage, 1882; soil, heavy red.

226. IRWIN BROTHERS, War-rilla Vineyard, Ipswich.—(1) White Wine, "Verdeilho." Age of vine, 12 years; cultivated by horse and hand labour, and trained on wire trellises; vintage, February, 1883; soil, clay, with nodules of magnesian limestone. (2) Red Wine, "Mataro." Age of vine, 12 years; cultivated by hand and horse labour, and trained on wire trellises; vintage, 1883; soil, clay, with nodules of magnesian limestone.

227. KIEHM, HENRY, Ruthven Vineyard, Toowoomba.—(1) Red full table Wine, from Black Spanish and Isabella grapes. Age of vine, 5 years; trenched 2 feet deep, and trained on single stakes; vintage, February, 1885; soil, red volcanic—iron gravel. (2) Full table Wine, from Black Spanish and Isabella grapes. Age of vine, 5 years; trenched 2 feet deep, trained on single stakes; vintage, February, 1885. Soil, iron gravel (red volcanic).

228. KIRCHER JACOB, Assmanshausen Vineyard, Warwick.—(1) Red "Hermitage." Age of vine, 12 years; cultivated by plough and horse-hoe, and trained on wire trellis; vintage, 1879; soil, loamy gravel. (2) White "Verdeilho." Age of vine, 12 years; cultivated by plough and horse-hoe, and trained on wire trellis; vintage, 1879; soil, loamy gravel. (3) Red "Hermitage." Age of vine, 12 years; cultivated by plough and horse-hoe, and trained on wire trellis; vintage, 1884; soil, loamy gravel. (4) White "Verdeilho." Age of vine, 12 years; cultivated by plough and horse-hoe, and trained on wire trellis; vintage, 1884; soil, loamy gravel.

229. LAMBERT, G., Mt. Walker, Ipswich.—(1) Black "Hermitage." Full-bodied Wine. Age of vine, 6 years; cultivated by horse-labour, and trained on its own stalks; vintage, 1884; soil, black limestone. (2) White "Hermitage." Age of vine, 7 years; cultivated by hand, and trained on trellises; vintage, 1883; soil, gravel.

230. LE GRAND, ROBERT W., Wooyumboong Vineyard, Ipswich.—(1) Dry Wine, "White Sherry." Age of vine, 6 years; trenched by hand, and trained on wires; vintage, 1885; soil, light loamy clay, and stony. Brand: L in diamond. (2) Sweet White "Hermitage." Age of vine, 7 years; trenched by hand and laboured by horse-power, and trained on three horizontal wires; vintage, 1885; soil, light loam, yellow clay, and broken rock. (3) Dry Red Wine; vintage, 1883.

CLASS 75.—*Spirits.*

231. CASTLES, WILLIAM, Loganholme.—Rum.

232. DAVY & GOODING, Beenleigh.—Rum, 18 months old.

233. GARDNER, OWEN, Normanby Distillery, near Brisbane.—Rum, in cask and in bottle.

234. MELBOURNE-MACKAY SUGAR CO., Limited, Alexandra

Plantation Distillery, Mackay.—
(1) Proof Rum, from Alexandra Plantation.
(2) Proof Rum, from Tekowai Plantation.

235. MILTON DISTILLERY CO., Brisbane.—Rum.

236. PLEYSTOWE SUGAR CO., Mackay.—Rum, in bottle and in cask.

237. RAFF, GEORGE, Caboolture.—Plantation Rum, in bottle, distilled in 1875.

CLASS 76.—*Aërated and Mineral Waters.*

238. HELIDON SPA WATER CO., Brisbane.—Helidon Spa Water, in bottle. This water rises from a depth of 60 feet, and spouts to a height of 20 feet above the ground, at the rate of 2,000 gallons per hour.

Analysis.

	Gra. per. gallon.
Bicarbonate of sodium ...	221.36
" potassium ..	2.34
" lithium ...	1.81
" calcium ...	10.65
" magnesium ...	1.82
" rubidium—Traces in the spectroscope.	
Chloride of sodium ...	48.08
Silica ...	2.13
Alumina and iron ...	3.23
	291.42

Sulphates and phosphates—traces.

Borates only recognisable by the spectroscope after having large quantities of water evaporated.

Iodides, bromides, fluorides—absent.

Organic substance present only in traces.

Temperature of the water—60°.

Specific gravity at 78°—1.00766.

239. HOOPER, JOHN HENRY, Ipswich.—Aërated Waters.

CLASS 77.—*Vinegar, Cordials, &c.*

240. BAIN, JAMES, Ipswich.—
(1) Malt Vinegar, &c. (2) Cordials.

241. HOOPER, JOHN HENRY, Ipswich.—Cordials.

CLASS 78.—*Other Provisions not specified.*

242. BRISBANE REFINERY CO., Limited, Brisbane.—Golden Syrup.

243. HART, DANIEL, Mossman River.—Ginger, Raw.

Group XI.—AGRICULTURE AND HORTICULTURE.

CLASS 79.—*Agricultural Products.*

244. BAILEY, FREDERICK MANSON, F.L.S., Colonial Botanist, Brisbane.—Collection of Native Grasses.

245. HUTCHINSON, ABRAHAM, Northumberland House, Gympie.—(1) Pumpkins, grown in virgin soil. (2) English Potatoes, grown in virgin soil during a very dry season—1885. (3) Maize, in cob; an average sample, grown on black alluvial soil, clay bottom, undrained, and under crop for fifteen years, yielded, without manure, nearly 60 bushels per acre. (4) Maize, first crop from a black alluvial soil. (5) Truss of Hay, from Kangaroo Grass (*Anthistiria ciliata*, Linn.); made in December, 1884.

246. WITTY, W. K., Yatala.—*Saccheureka*; cattle food.

CLASS 80.—*Horticultural Products.*

247. BAILEY, FREDERICK MANSON, F.L.S., Colonial Botanist, Brisbane.—Indigenous Ferns—dried specimens (in charge of the attendant).

248. QUEENSLAND COMMISSIONERS, Brisbane.—Live Plants and Orchids.

CLASS 81.—*Processes, Implements, and Machinery, applied to Agricultural and Horticultural Products.*

249. QUEENSLAND COMMISSIONERS, Brisbane.—Bullock Dray,

as used by Queensland squatters; now being gradually superseded by horse-teams and the railway.

CLASS 82.—*Plans, Processes, Implements, and Machines, used in Irrigation.*

CLASS 83.—*Garden Furniture.*

CLASS 84.—*Manures.*

250. HOGARTH AUSTRALIAN MEAT PRESERVING CO., Limited, Oakley Creek, Darling Downs.—Bone Manure.

CLASS 85.—*Objects not otherwise specified.*

251. BLACKMAN, F. A., Brisbane.—(1) Model of a Stockyard (cattle), and all appliances complete. (2) Model of Farm Gates, Speying Bail; and other models.

252. QUEENSLAND COMMISSIONERS, Brisbane.—A Bark Hut, or Bush Residence, to illustrate the way in which a shelter is quickly constructed in the bush and generally used by the early settlers.

253. SHANN, WILLIAM, Bowen.—Model of a Bush Hut or Humpy.

254. VAGG, ARTHUR JOHN, Poole Island, Bowen.—Model of Poole Island Freezing Works.

Group XII.—ETHNOLOGY, ARCHÆOLOGY, AND NATURAL HISTORY.

CLASS 86.—*Ethnological Collection.*

NEW GUINEA EXHIBITS.

255. LIVESEY, W. B., Special Commissioner "Brisbane Courier."—Curios, made and used by the natives of New Guinea:—(1) Gourds for carrying lime (the lime is chewed with betel-nut). (2) Coconut Cups. (3) Pottery Vessels for cooking. (4) Armlets. (5) Necklaces. (6) Stone Adzes. (7) Adzes, set in handles. (8) Large Pipes. (9) Small Pipe. (10) Clubs. (11) Grass Petticoats. (12) Short Grass Petticoats. (13) Bows. (14) Nets, including Kangaroo Nets. (15) Arrows. (16) Spears. (17) Native Drill. (18) Model, New Guinea Catamaran or Boat. (19) Yam Stick.

256. MILMAN, HUGH, Cooktown.—New Guinea Curios, comprising:—(1) Spears. (2) Stone Adzes. (3) Paddles.

(4) Models of Canoes. (5) Clubs. (6) Swords. (7) Shell Armlets. (8) Necklaces. (9) Head Ornaments. (10) War Masks. (11) Wooden Knives. (12) Shields. (13) Lime Gourds. (14) Pipes. (15) Fibre Armlets. (16) Coconut Bowls. (17) Grass Petticoats. (18) Cauldrons. (19) Dishes. (20) Water Carriers. (21) Shell, Teeth, and other Ornaments.

257. QUEENSLAND COMMISSIONERS, Brisbane.—Collection of New Guinea Curios, comprising:—(1) Stone Clubs. (2) Stone Adzes. (3) Stone Processional Axes. (4) Shields. (5) Drums. (6) Lassoos or Mancatchers. (7) Bamboo Pipes. (8) Combs. (9) Lime Gourds. (10) Shell Armlets. (11) Wallaby Teeth Necklaces. (12) Food Dishes. (13) Bone Knives. (14) Grass Skirts. (15) Netted Bags. (16) Wooden Dugongs. (17) Telescopic Baskets. (18)

Cocoanut Cups. (19) Ebony Lime Spoons. (20) Whale-rib Lime Spoon. (21) Shell Knee-band. (22) Pandanus Leaf Mat. (23) Paddles. (24) Mourning Arm-bands. (25) Two-man Canoe, carved and painted. (26) One-man Canoe, carved and painted. (27) Paddles for the above. (28) Carved and Painted Idol. (29) Bowls, or Wooden Cauldrons. (30) Cocoanut Ladles. (31) Carved Calabashes. (32) Large Masks or Head-dresses, used in war dance. (33) Horn Bell Crest. (34) Flax Bag. (35) Model Canoe. (36) Net-catchers. (37) Bundle of Arrows. (38) Bamboo Knife. (39) Head-dresses. (40) Pipe. (41) Water Shells. (42) Bead Necklace.

QUEENSLAND ABORIGINAL EXHIBITS.

258. AHERN, JOHN, Muttaborra.—(1) Boomerangs. (2) Nulla-nullas. (3) Coolamans. (4) Shields. (5) Net, worn round the waist at Boras, on special occasions. (6) Spears. (7) Woo-ma-rahs.

259. BANCROFT, T. L., M.D., F.L.S., Geraldton, Johnstone River.—Aboriginal exhibits collected in the Johnstone River district, comprising:—(1) Three Baskets. (2) Blanket, made of the inner bark of trees. (3) Necklace. (4) Two Swords.

260. BRANNELLY, P., Normanton.—Aboriginal Curios.

261. GUNN, DONALD, Pikedale, Stanthorpe.—Stone Tomahawks.

262. LOCAL COMMITTEE, Bowen.—Curios, comprising:—(1) Boomerangs. (2) Nulla-nullas. (3) Shields.

263. LOCAL COMMITTEE, Cardwell.—Aboriginal Curios collected in the Cardwell district, comprising:—(1) Four pairs of Aboriginal Blankets, made from the bark of trees, as found in use amongst the blacks on the Tully River, near Cardwell. (2) Bags and Tassels.

264. LOCAL COMMITTEE, Clermont.—Aboriginal Curios collected in the Clermont district, comprising:—(1) Boomerangs. (2) Nulla-nullas. (3) Knives. (4) Hielemans. (5) Dilly Bags. (6) Stone Tomahawks. (7) Spears. (8) Woo-ma-rah.

265. LOCAL COMMITTEE, Cocktown.—Spears, &c.

266. MORRISBY, Mrs. ROWLAND, Blackall.—Pituri Bag, made by the blacks from native fibres, and shown in the form of package used by them for exchange or barter.

267. MURRAY, FREDERICK JOHNSTONE, Blackall.—(1) Boomerangs. (2) Grass Dilly Bags. (3) Wool Dilly Bags. (4) Bag of Pituri. (5) Necklaces. (6)

Cotton Dilly Bags. (7) Carving Tool. (8) Letter. (9) Fishing Net. (10) Material from which Nets are made. (11) Rounded Stones.

268. PINK, JAMES, F.R.H.S., Brisbane.—Stone Tomahawk, found at Cleveland, near Brisbane.

269. QUEENSLAND COMMISSIONERS, Brisbane.—Curios from Shanassy River:—(1) Skull. (2) Stone Tomahawks. (3) Ornaments, &c.

270. SAMWELL, WILLIAM, Georgetown.—Curios, collected in the Etheridge district, viz.:—(1) Long Hunting Spears, for killing kangaroos, &c. (2) Fighting Spears, pointed and barbed with pieces of telegraph wire. (3) Nulla-Nullas, or Clubs. (4) Woo-ma-rah, by which spears are thrown. (5) Wooden Shields. (6) Women's Ornaments.

CLASS 87.—*Implements connected with Fishery.*

271. LIVESEY, W. B., Brisbane.—(1) Fish Spears made by natives of New Guinea. (2) Fishing Nets.

272. MILMAN, H., Cooktown.—(1) Fish Spears. (2) Fishing Nets.

273. QUEENSLAND COMMISSIONERS, Brisbane.—Fishing Nets.

CLASS 88.—*Collection of Animals, Stuffed.*

274. BYTHEWAY, B., Gympie.—Glass-shade containing Birds procured in the Gympie Gold Field.

275. DYER, EDWARD, Sandgate, Brisbane.—Native Companion or Australian Crane.

276. HART, DANIEL, Mosman River.—Pair of Sooty Owls.

277. HYNE, RICHARD M., Maryborough.—Case of Stuffed Birds and Animals.

278. QUEENSLAND COMMISSIONERS, Brisbane.—Natural History Specimens, stuffed and prepared by Natives of New Guinea, viz.:—(1) Raggianas. (2) King Bird of Paradise. (3) Rifle Bird. (4) Mountain Pigeon.

279. QUEENSLAND COMMISSIONERS, Brisbane.—Prepared by E. SPALDING, Taxidermist to the Queensland Museum:—(1) Saw Fish (*Pristis zijsron*), from Moreton Bay. (2) Dugongs (*Halicore australis*), found on the Queensland coast; Moreton Bay its southern limit.

280. QUEENSLAND COMMISSIONERS, Brisbane.—Natural History Specimens, prepared by ANTHONY ALDER,

Brisbane, viz.:—(1) Water Lizard. (2) Carpet Snake. (3) Porcupine. (4) Platypus. (5) Wonga Wonga Pigeon. (6) Wallaby. (7) Blue Heron. (8) Cockatoo. (9) Ibis. (10) Opossum. (11) Squatter Pigeon. (12) Dove. (13) Great-billed Heron. (14) Wild Duck. (15) White-necked Heron. (16) White Heron. (17) Eagle, killing a Wallaby. (18) Hawk. (19) Stilts. (20) Sandpiper. (21) Puff Lizard. (22) Wild Dog, killing a Kangaroo. (23) Iguanas. (24) Scythrops, or Gigantic Cuckoo. (25) Regent Bird.

**281. QUEENSLAND COMMIS-
SIONERS, Brisbane.**—Specimens of
Natural History, viz.:—

MAMMALS.

(1) *Echidna hystrix*. (2) *Ornithorhynchus paradoxicus*. (3) *Macropus major*. (4) *Macropus robustus*. (5) *Macropus Parryi*. (6) *Macropus rufus*. (7) *Halmaturus dorsalis*. (8) *Halmaturus ruficollis*. (9) *Petrogale penicellata*. (10) *Phalangista vulpina*. (11) *Phasciolarctes cinereus*. (12) *Petaurista taguanoides*. (13) *Hydromys chrysogaster*.

BIRDS.

(1) *Aquila audax*, Lath. (2) *Falco lunulatus*, Lath. (3) *Tinnunculus cenchroides*, V. and H. (4) *Astur novaehollandiae*, Gmel. (5) *Astur leucosomus*, Sharpe. (6) *Astur approximans*, V. and Q. (7) *Baza subcristata*, Gld. (8) *Strix novaehollandiae*, Streph. (9) *Strix flammea*, L. (10) *Ninox strenua*, Gld. (11) *Ninox connivens*, Lath. (12) *Ogotheles novaehollandiae*. (13) *Podargus strigoides*, Lath. (14) *Eurostopodus albugularis*, V. and H. (15) *Eurostopodus guttatus*, V. and H. (16) *Merops ornatus*, Lath. (17) *Eurostomus pacificus*, Lath. (18) *Dacelo gigas*, Bodd. (19) *Dacelo Leachii*, V. and H. (20) *Dacelo cervina*, Gld. (21) *Halcyon sanctus*, V. and H. (22) *Halcyon Macleayi*, Jar. and Selb. (23) *Tanyptera sylvia*, Gld. (24) *Alcyon azurea*, Lath. (25) *Strepera graculina*, White. (26) *Gymnorhina tibicen*, Lath. (27) *Cracticus robustus*, Lath. (28) *Cracticus Quoyii*, Less. (29) *Grallina picata*, Lath. (30) *Grancalus melanops*, Lath. (31) *Grancalus mentalis*, V. and H. (32) *Grancalus lineatus*. (33) *Grancalus melanocephalus*. (34) *Psophodes crepitans*, V. and H. (35) *Pitta strepitans*, Temm. (36) *Oreocincla Heinii*, Cab. (37) *Ptilonorhynchus holosericeus*, Kuhl. (38) *Ailuraedus cramirostris*, Payk. (39) *Chlamydodera nuchalis*, Jar. and Selb. (40) *Chlamydodera maculata*, Gld. and Bower. (41) *Sericulus melinus*, Lath. (42) *Mimeta viridis*, Lath. (43) *Mimeta flavocincta*, King. (44) *Sphecotheres flaviventris*, Gld. (45) *Struthidea cinerea*, Gld. (46) *Calornis metallica*, Temm. (47) *Pomatostomus temporalis*, V. and H. (48) *Anthochaera inauris*, Gld. (49) *Philemon corniculatus*, Lath. (50) *Ptilorhis para-*

disea, Swains. (51) *Craspedophaera Alberti*, Gray. (52) *Paradisea raggiana* (New Guinea). (53) *Scythrops novaehollandiae*, Lath. (54) *Endynamis cyanocephala*, Lath. (55) *Centropus phasianus*, Lath. (56) *Cacatua galerita*, Lath. (57) *Eolophus rosei capilla*, Vieill. (58) *Calyptorhynchus Solandri*, Temm. (59) *Calyptorhynchus xanthonotus*. (60) *Microglossus aterrimus*, Gml. (61) *Aprosmictus scapulatus*, Bechs. (62) *Ptistes erythropterus*, Gml. (63) *Platyercus Barnardi*, V. and H. (64) *Platyercus Pennantii*, Lath. (65) *Platyercus pallidiceps*. (66) *Peephotus hamatonotus*, Gld. (67) *Lathamus discolor*, Shaw. (68) *Trichoglossus novaehollandiae*, Gml. (69) *Trichoglossus versicolor*, Vig. (70) *Trichoglossus consinnus*, Shaw. (71) *Trichoglossus pusillus*, Shaw. (72) *Ptilinopus Swansonii*, Gld. (73) *Ptilinopus superbus*, Temm. (74) *Megaloprepia magnifica*, Temm. (75) *Megaloprepia assimilis*, Gld. (76) *Carpophaga norfolciensis*, Lath. (77) *Sophaimus antarcticus*, Shaw. (78) *Leucosarcia picata*, Lath. (79) *Phaps chalcoptera*, Lath. (80) *Ocyphaps lophotes*, Temm. (81) *Erythrauchen lophotatus*, Temm. (82) *Talegallus Lathamii*, Gray. (83) *Megopodius tumulus*, Gld. (84) *Dromaius novaehollandiae*, Lath. (85) *Casuarus australis*, Wall. (86) *Edicircus grallarius*, Lath. (87) *Lobivanellus lobatus*, Lath. (88) *Geronticus spinicollis*, Jameson. (89) *Threskiornis strictipennis*, Gld. (90) *Platylea melanorhynchos*, Reich. (91) *Ardea sumatrana*, Raffl. (92) *Ardea pacifica*, Lake. (93) *Ardea novaehollandiae*, Lath. (94) *Herodias intermedia*, Huss. (95) *Nycticorax caledonicus*, Lath. (96) *Botaurus poicilopterus*, Wagl. (97) *Boturoides favicollis*, Lath. (98) *Porphyrio melanotus*, Temm. (99) *Gallinula tenebrosa*. (100) *Fulica australis*, Gld. (101) *Branta (Clamyochoen) jubata*, Lath. (102) *Netappus pulchellus*, Gld. (103) *Netappus albipennis*, Gld. (104) *Anas superciliosa*, Gmel. (105) *Dendrocygna vagans*, Eyton. (106) *Erismatura australis*, Gld. (107) *Cygnus atratus*, Lath.

REPTILES.

Snakes.

(1) *Monelia variegata* (Carpet Snake). (2) *Dendrophis puntulata* (Tree Snake). (3) *Dipsosus fusca* (Brown Snake). (4) *Diemenia olivacea*.

Lizards.

(1) *Cyclodus* (Sleeping Lizard). (2) *Chlamydosaurus Kingii* (Frieded Lizard). (3) *Trachysaurus* (Shingle-back). (4) *Hydrosaurus* (Iguana).

**CLASS 89.—Other Natural History
Specimens.**

282. AHERN, JOHN. *Mutta-
burra.*—Emu Eggs.

283. BAIRD, J. C., Cooktown.—Case of Moths, Beetles, and Butterflies, from the Cook district.

284. BRANNELLY, P., Norman-ton.—Alligators' Eggs.

285. BREWSTER, GEORGE H., Cooktown.—Skin of Carpet Snake (21 feet long, 19 inches wide).

286. BROWN, FRANK, Cooktown.—Trophy of Marine Shells.

287. HARTMANN, CARL H., Toowoomba.—(1) Fossil Shells from Colaroy, North Queensland, and from Maryborough. (2) Fossil Coral Rock from Murray Island (700 feet above sea-level). (3) Fossil

Shell Rock, Prince of Wales Island. (4) Fossil Bones, Darling Downs. (5) Cast of the Head of the Marsupial Lion (*Kylocalco carnifex*), from the only complete head discovered.

288. McNICOLL, JOHN, Dynevor Downs.—Emu Eggs.

289. MILLMAN, HUGH, Cooktown.—New Guinea Shells.

290. QUEENSLAND COMMISSIONERS, Brisbane.—Dingo, or Native Dog—alive.

291. RAYMOND, PERCY A., Mackay.—Alligator Skin, skull and jaw intact.

Group XIII.—MINING, METALLURGY, AND THEIR APPLIANCES.

CLASS 90.—*Models and Drawings of Mining Machinery and Tools.*

292. MAWE, FRANCIS WALFORD, Ravenswood.—Mining Tools, comprising:—(1) Double-handed Hammer. (2) Single-handed Hammer. (3) Double-headed Pick. (4) Single-headed Pick. (5) Single-headed Pick without Handle. (6) Gads. (7) Single-handed Drills. (8) Double-handed Drills. (9) Tamping Bar. (10) Pair Pincers. (11) Scraper.

CLASS 91.—*Crushing Machines.*

293. A Quartz Crushing Machine or Battery, of five heads, constructed by John Walker and Co. Limited, Maryborough. Will be exhibited at work in the Queensland Court.

CLASS 92.—*Gold Amalgamators.*

CLASS 93.—*Smelting Furnaces.*

CLASS 94.—*Sections of Metalliferous Lodes and Mineral Strata.*

294. ARCHIBALD, JOHN, Gold-Warden, Ravenswood.—(1) Plan of King's Silver Lode, and of the Underground Workings. (2) Plan of Black Jack Reef and Workings.

295. FARLEY, HERBERT, Stanthorpe.—Model of a Section of Tin Mine:—(1) Granite Rock at bottom of the face. (2) Washdirt, fairly rich, 8 inches to 1 foot thick. (3) Coarse Drift, 4 feet thick. (4) Black Clay and Carbonised Wood, 2 feet thick. (5) Hard Sandy Formation, 5 feet thick. (6) Clay Formation (yellowish), 2 feet thick. (7) Clay Formation (white and bluish), 1 foot thick. (8) Cement Formation, 2 feet thick. (9) Fine Drift Sand, 12 to 18 inches thick. (10) Soil, 2 feet thick.

296. MAWE, FRAS. J., Ravenswood.—(1) Plan of the Day Dawn Mine, Charters Towers. (2) Drawings of King's Silver Lode and Black Jack Reef, Ravenswood.

297. SHAKESPEARE, JOSEPH, Charters Towers.—Plans of underground Workings and Sections of Gold-bearing Lodes at Charters Towers:—

I. Day Dawn Block Mine.—Represents the west side of the main underlie shaft below the No. 3 level. The actual lode here is 22 feet 6 inches wide, and composed of 5 distinct bands, as follows:—Starting from the foot-wall the first band is of quartz heavily charged with iron pyrites and galena, locally termed mundic. The gold is fine, associated with old mundic, and rarely visible to the eye. This band is succeeded by one of white quartz, containing but little of sulphides, but occasionally rich nests of free coarse gold. The third band is of quartz, similar to that of No. 1 band. Above the third band is one of the dyke-rock, forming the "country" or wall rock of the Day Dawn lode, streaked with small veins of gold-bearing quartz. Above the diorite band, and lying against the hanging wall, is a band of highly mineralised quartz, very rich in gold. This may be taken as typical of the Day Dawn lode. The various bands are here arranged more distinctly and more symmetrically than elsewhere.

II. Day Dawn Block Mine.—Shows the method of securing the levels. The saddle-back "stalling" is strengthened by interior sets, closely lined with slabs.

III. Day Dawn Block Mine.—View of a stope, about 550 feet vertical depth from the surface. The disposition of the veins or bands forming the gangue is somewhat similar to that shown in No. I., but the proportions vary. The column of cribwork, made of firewood

billets, shown at the left, are for preventing the lode sliding down the walls *en masse*. That shown at the right is the method adopted for securing the hanging wall, in addition to filling up the worked ground with "deads" (*i.e.*, valueless rock) obtained in the working.

IV. Day Dawn Block Mine.—Fig. 1.—The lode is here disordered towards the hanging wall, and the white band is mixed with "formation" (*i.e.*, disintegrated wall-rock), and the upper band shows a somewhat lenticular arrangement. Fig. 2 is the face of the No. 3 west level, about 640 feet vertical depth. The lode here consists of alternate bands of quartz and dyke-rock, the latter much shattered and streaked with quartz strings.

V. Day Dawn Block Mine.—No. 3 level east, opposite to that represented in Fig. 2, No. IV. The lode is here much contracted, but the various bands composing it are still traceable. The footwall dyke-rock is seamed with strings of quartz, and presents the appearance of having been much shattered by a combined bearing and crushing strain, and the fissures thus formed subsequently filled in by infiltration. The angle of dip of the lode is slightly greater at this level than above or below it.

VI. Day Dawn Block Mine.—Two faces in the No. 2 shaft workings, on the western end of the Day Dawn "shoot," or "ore-chimney." Fig. 1 is the face of the 500-foot level, advanced 100 feet beyond the stope shown in Fig. 2. The hanging-wall band of quartz (Fig. 1) is composed of a number of plates, or laminae, of quartz, slightly mineralised, and with a distinct parting between each plate. At the footwall, overlying a layer of soft black "dig," is another band of quartz, with a distinct parting in the middle. The space between the quartz bands on foot or hanging wall consists of dyke-rock, seamed with quartz strings, and divided in the middle by a narrow vein of white quartz. Fig. 2 is the face of a stope above the 500-foot level. The alternate bands of quartz-dyke, &c., are here seen to advantage.

VII. Day Dawn P. C. Mine.—Represents face of the No. 6 level (about 420 feet vertical depth), which consists of a number of bands of quartz, some showing a lenticular arrangement, and all varying in the proportions of sulphides and wall-rock ("formation"), mixed with the quartz.

VIII. Day Dawn P. C. Mine.—Fig. 1 is the face of the No. 7 level (about 500 feet vertical depth). The alternation of quartz bands is still seen. The angle of dip is 47 degrees at this level, and the thickness of the lode is much less than at the level above.

Craven's Caledonian Mine, Fault.—Fig. 2 is a section of the middle of Craven's Caledonian Mine. The original workings are on the "Just-in-Time" lode; but in sinking the

underlie a "fault" or "cross course" of "formations," or disintegrated wall-rock, was met with, and followed down, as a footwall, for a distance of 140 feet. At that depth another reef was discovered in the hard footwall, and this reef is considered to be identical with the Caledonian reef worked in the adjoining lease (Kelly and Hughes's Caledonian). The new reef has been followed and found to occur in very hard country rock—granite—and the crushings yield from 1 to 3 oz. per ton. The mean strike of the "Just-in-Time" lode is 160 degrees south, 20 degrees east; that of the Caledonian, about 120 degrees south, 60 degrees east. The strike of the level on the Caledonian vein in the mine in question is from 90 degrees to 100 degrees; that of the fault is 204 degrees. Both the "Just-in-Time" and the Caledonian lodes are faulted, but the continuations on the other side of the fault have not yet been found, or, in fact, searched for.

IX. North Queen Mine.—Fig. 1 represents a section of the lode, taken vertically along the lowest level, 450 feet depth. The true footwall was followed in sinking the underlie shaft, and the level also followed that wall. On the south-west side of the underlie a vein, from the apparent hanging wall, joined the face of the footwall vein (position indicated at *a*), whilst at an equal distance north-east the same vein stands 19 feet above the lower one, and at a further distance of 50 feet the two veins are 40 feet apart. The hanging wall of the upper vein is not granite, but "formation," carrying quartz veins. The upper vein is very rich in gold and sulphides, and is estimated to assay 4 to 6 ounces per ton. Fig. 2 shows the face of the level at (*a*), where the veins approach sufficiently to be worked together. The formation between the veins is highly impregnated with sulphides, and is divided by a distinct wall, having polished and striated faces as if from fault movement.

X. North Queen Mine.—Fig. 2 is the fore-breast of the same level about 50 feet in advance of that shown in IX. Fig. 2. The veins are still divided by the "formation band," which is highly mineralised. Fig. 1 is a view of the upper face of the stopes above the 300-foot level. Four distinct bands of quartz, each varying in structure and in mineral contents, are seen in this face. The hanging wall of this group of veins is of formation rock, much shattered and seamed, with joints having polished faces, termed "greasy heads" by the miners.

XI. North Queen Mine.—Fig. 1.—Side view of a stope, above, and to the rear of, the face shown in X. Fig. 2. The lode is somewhat contracted, but the distinctive bands remain, and the "flucon" band in the formation shows a friction-polished face. Fig. 2. The side of a winze sunk from the 400-foot level. Each of

the faces of the walls within the lode shows signs of a fault movement. (The striated faces may be observed in most of the exhibits from this mine.)

XII. Bonnie Dundee Mine.—Fig. 1 is a side view of the underlie shaft of the Bonnie Dundee mine, Queen reef, at 450 feet vertical depth. The footwall is of true granite. The lode is composed of distinct bands of quartz "formation," and quartz, highly mineralised; and the lower portion of the lode is of hard "formation" rock, with wall partings along the lode.

XIII. Bonnie Dundee Mine.—Figs. 1, 2, and 3 are views taken in the stopes at various places in the Bonnie Dundee mine, below the 500-foot level (350 feet to 450 feet vertical). The lode is at all times made up of bands of quartz and formation rock. This peculiar mode of occurrence is constant in the Queen lode.

XIV. Victory Mine.—Represents faces in the Victory mine. Fig. 1 shows the forebreast of the lowest southern level (300 feet vertical depth). The lode is formed of two bands of quartz, separated by formation rock as hard and as solid as the crystalline granite of the walls. Fig. 2 shows the face of a stope about 30 feet to the rear of the face shown in Fig. 1. The upper portion of the face shows a lode of solid quartz, divided by a wall, or parting, which is persistent throughout. The wedge-shaped "formation" is the beginning of the wide belt shown between the veins in Fig. 1. The lode here consists of two distinct veins, differing in their mineral contents. The composite character of the Victory lode is well shown in Fig. 2, XII., representing the face of the 350-foot level, north. There are three distinct bands of quartz, each divided from the other by a wall. Two of the bands carry iron pyrites and galena in addition to gold, which is fine, and associated with the mundic. The third band is of white quartz, free from mundic, but carrying free coarse gold, and, occasionally, rich specimens are obtained. The band of specimen-bearing quartz is much inferior in richness to the others carrying the mundic. The exhibits from this mine show both the white quartz, with free gold visible, and also the mineralised quartz, without visible gold but of high grade. They also very clearly manifest the difference in the mode of distribution of the gold and the associated minerals.

XV. Eastward Ho! Mine, Wyndham Reef.—Figs. 1 and 2 represent stope faces in the Eastward Ho! mine in the Wyndham lode or reef. The lode here consists of two bands; the upper of "ribbony" quartz, in places highly mineralised; the lower, of a mixture of quartz and formation rock, both mineralised in patches.

XVI. Rainbow Mine.—Fig. 1 represents the intersection of the lode, and a greenstone

diorite dyke. The strike of the lode is N. 20 degrees W., S. 20 degrees E.; that of the dyke E.W. The lower band of quartz has been severed by the dyke, with a vertical displacement of about 18 inches, whilst the dyke itself is cut by the upper band and heaved horizontally 2 feet. The whole shows that a long interval must have elapsed between the formation of the lower and upper bands of quartz, and that the order of succession was—(1) Lower vein; (2) Intrusive diorite dyke; (3) Upper quartz vein. Fig. 2 is a sketch (from memory) of a stope in the same mine at about 200 feet vertical depth. The formation was about 8 feet wide, with a small vein in the footwall. A number of lumps of true ribbony-vein quartz were imbedded in the formation rock. The character of the quartz and the position of the pieces leave no room for doubt that they were the fragments of a vein torn to pieces by one of the many fault movements to which the lode has been subjected. A nearly vertical clayey fault traversed the country between the positions indicated by these two sketches, causing a vertical displacement of the lode to the extent of 18 feet.

XVII. Broughton Consolidated Mine, Esperanza Reef.—Represents two faces in this mine, situated about twelve miles from Charters Towers. Fig. 1 is the face of the lode in a stope traversed by a diorite dyke or "bur." The true walls are about 10 feet apart, and the lode is composed of four distinct quartz veins separated by masses of "formation" rock. The upper vein was inaccessible at the intersections, and its behaviour with respect to the dyke could not be ascertained. The second and fourth veins were severed and slightly heaved by the intrusive dyke, but the third vein (a) traversed the dyke, displacing it about a foot. The second and fourth veins, it is evident, were anterior to the intrusion of the dyke, and the third vein posterior to it. Fig. 2 is a view of the lode, as disclosed in a level and stope a short distance below the dyke, the veins b, a, c, only, being worked. The vein (a) still maintains a distinct course alongside the others, and is more heavily charged with zinc blende, in addition to pyrites and galena, than the others. The dip of this lode nowhere exceeds 30 degrees.

XIX. Nos. 1 and 2 S.W. Queen Cross-reef.

—Figs. 1, 2, and 3 are views taken in the workings of the so-called cross-reef of the Queen. This reef intersects the true Queen lode almost at right angles, and is generally considered as the extension of the St. Patrick Reef. Fig. 1 shows the stope above the 300-foot level. The lode is composed of a band of black flucan in the hanging wall, then a band of mixed quartz and "formation" rock much mineralised, and a band of highly mineralised ribbony quartz on the footwall. Fig. 2 is a view of the south

side of a winze in course of sinking below the 400-foot (vertical) level. The lode consists of one band of mineralised quartz, with a thin band of "formation" rock between it and the hanging wall. Fig. 3 is a view of the north side of the same winze about 30 feet higher up. The upper band of quartz thins out, and is replaced by a band of "formation," which, however, is only a lenticular mass.

NOTE.—The word "formation" used here is the term used locally to express the rock found between the true crystalline granite walls of the lodes of the Charters Towers Gold Field. Strictly speaking, it is granite debris, no doubt derived from the walls when the fissure was formed, and re-consolidated by movements under heavy pressure, and also silicified by infiltration. "Fragmentary gangue rock" is perhaps a better term than "formation."

XX.—Represents faces in mines situate in the Georgetown portion of the Etheridge Gold Field, 300 miles distant from Charters Towers. Fig. 1 is the forebreast of the 400-foot south-west level (280 feet vertical depth) in the P.C. Cumberland mine. The lode is composed of two distinct bands of quartz, one, on the footwall, quite white, poor in gold, and devoid of sulphides; the other, very highly mineralised (iron pyrites and galena), black in colour and exceedingly rich in gold. A dyke of quartzose porphyry accompanies the lode throughout its course, sometimes lying between the two veins, sometimes above them (as shown

in the sketch), and sometimes forming the foot-wall of the lode. The Cumberland reef has been traced upwards of a mile along the strike. In the P. C. mine (O'Brien and Co.), it varies in width from 9 inches to 13 feet, with an average of workable quartz of about 6 feet thick. The yields per ton range from 1 oz. to 4 oz. (average 2 oz.) The loss in milling is known to exceed 1 oz. per ton, and is caused by the intractable nature of the mundic. Strike of the lode: N. 41 degrees W.; dip, easterly, at 45 degrees mean. Fig. 2 show the face of a stope in the Aurora mine, and represents a somewhat common occurrence in the Etheridge mines, where the lodes are, as a rule, less complex than those of the Charters Towers Field. The Aurora is a solid quartz vein, apparently resulting from a single fault movement, and ranges from a few inches to 5 feet in thickness. The quartz above permanent water level is highly ferruginous, and also contains galena and blue and green carbonates of copper. Where the lode is large, drusy cavities are found. That represented in the sketch extended along the face for about 20 feet. The sides of the cavity were lined with large quartz crystals, their points standing towards the axes of the vein. The cavity was filled with a mass of decomposed and ochreous ores, together with lead and copper carbonates and gold.

Group XIV.—WOOL.

NOTE.—In consequence of the severe drought prevailing throughout the whole of the year, none of the Wool Exhibits are fair specimens of the clips of the Colony.

CLASS 95. — *Wool—Fine Combing and Combing, Heavy Combing, Cross-bred, Coarse Wool—washed, in grease, in fleece, and in bale.*

298. **ALLAN, WILLIAM, Dalveen, Warwick.** (Latitude, S. 28 degrees; longitude, 152 degrees.)—(1) Bale of Black Ewes' Wool, 70 fleeces, about 370 days' growth; weight, 2 cwt. 3 qrs. 17 lbs. Sheep fed on natural grasses only. Soil, granite and slate; altitude, 2,800 feet. These sheep always reproduce their like, generally a shade darker. The tongue and mouth are black, the mutton is dark in colour, and very sweet and gamey. The wool at the London sales, 1885, brought 1s. 6½d. per pound, for the fleece all round, in grease. Cloth from it is of a dark coffee-colour, and does not fade or rot. (2) Combing Wool, in fleece—Black, Dark-grey, and Light-grey; 370 days' growth. Soil, granite and slate. Sheep fed on natural grasses only. (3) Combing Wool, in fleece—one ram and ten ewes. About 370 days' growth. Ram partially hand-fed. Ewes fed on natural grasses only. Soil, granite and slate; altitude, 2,800 feet.

299. **ARMYTAGE, C. A., Afton Downs Station, Hughenden, Burke District.** (Latitude, S. 20 degrees 50 minutes; longitude, E. 144.)—Combing Wool, in grease; common flock; Lambing Ewes; 360 days' growth. Sheep fed on natural grasses only.

300. **CHIRNSIDE, RILEY, & CO., Vindex Station, Muttaborra, North Gregory.** (Latitude, S. 20 degrees 30 minutes; longitude, E. 142 degrees 40 minutes.)—Combing Wool, in fleece—Ewes'; 360 days' growth. Sheep grass-fed.

301. **CLARK, GEORGE, East Talgai, Hendon, Darling Downs.** (Latitude S. 28 degrees; longitude, E. 152 degrees.)—(1) Fine Combing Wool, in grease—Ewes'. (2) Fine Combing Wool, in grease—Ewes'; six fleeces; 365 days' growth. (3) Fine Combing Wool, in grease—Rams'; six fleeces; 390 days' growth.

302. **DARLING DOWNS AND WESTERN LANDS CO., Limited, Jimbour, Dalby.** (Latitude, S. 27 degrees; longitude, E. 151 degrees 10 minutes.) (1) A fleece of strong Combing Wool, in grease; ram, bred from a Spanish merino (Le Grand) ram; grass-fed; under 12 months' growth. (2)

Combing Wool, in fleece—Ewes'; 365 days' growth; five fleeces. (3) Combing Wool, in fleece—Rams'; 365 days' growth; five fleeces. (4) Combing Wool, in fleece—Rams'; 365 days' growth; five fleeces.

303. FANNING, NANKIVELL, & CO., Tambo Station, Barcoo River, Mitchell District. (Latitude, S. 24 deg.; longitude, E. 146 deg.)—Six fleeces of Clothing Wool—Ewes'; 300 days' growth. Hot-water washed; heat of water 110 degrees (a small quantity of soap and caustic soda used, the latter to take the hardness from the water), afterwards hot-water spouted. The sheep were grass-fed entirely in paddocks.

304. FISHER, C. B., Ellangowan, Darling Downs. (Latitude, S. 27 deg. 56 min.; longitude, E. 151 deg. 40 min.)—(1) Strong Combing Wool—Merino Rams, 2 years old; six fleeces, 395 days' growth, greasy. (2) Strong Combing Wool—Merino Rams, 2 years old; six fleeces, 395 days' growth, greasy.

305. GORE & CO., Yandilla, Darling Downs. (Latitude, S. 27 deg. 50 min.; longitude, 151 deg. 25 min.)—(1) Fine Combing Wool—Ewes'; six fleeces, 300 days' growth. Washed by spouts with Condamine River water (very soft); sheep grass-fed. (2) Combing Wool—Ewe Hoggets; six fleeces, 315 days' growth. Washed by spouts with Condamine River water (very soft); sheep grass-fed. Soil, rich black alluvial, from 6 feet to 15 feet in depth; subsoil, rich brown loam, under which lies the sand and gravel drift, in which is found a vast supply of water.

306. HODGSON & RAMSAY, Eton Vale, Cambooya, Darling Downs. (Latitude, S. 27 deg. 40 min.; longitude, 152 deg.)—(1) Fine Combing Wool—Rams'. Three fleeces, average growth 351 days. One fleece from sheep grass-fed, the others from sheep partially hand-fed. Rams have been used for breeding purposes. (2) Fine Combing Wool—Ewes'. Three fleeces, No. 1, 373 days' growth; No. 2, 380 days' growth; No. 3, 373 days' growth. Nos. 2 and 3 have been rearing lambs. Sheep grass-fed.

307. MACANSH, JOHN D., Canining Downs, Warwick. (Latitude, S. 28 deg. 12 min.; longitude, E. 126 deg. 5 min.)—(1) Fine Combing Wool—Breeding Ewes, from Rambouillet blood. Five of the ewes 3 years old, and one 4 years old. Six fleeces, weighing 75 lbs. 10 oz. One fleece 364 days' growth, one 367 days, one 368 days, three 369 days. Grown on deep blacksoil plains and downs of volcanic formation. Sheep grass-fed. (2) Fine Combing Wool—Ewes, from Rambouillet blood. Six fleeces, weighing 75 lbs. 8 oz. One fleece from breeding ewe 3 years old; the others from maiden ewes, of which two

were 15 months old and three were 2 years old: One fleece 360 days' growth, one 361 days, one 367 days, three 364 days' growth. The breeding ewe was grass-fed, the others partially hand-fed. Grown on deep blacksoil plains and downs of volcanic formation. (8) Rams' Wool. Six fleeces, weighing 94 lbs. 8 oz. Two fleeces 358 days' growth, one 361 days, one 364 days, two 365 days' growth. One ram 15 months old, one 22 months, one 25 months, two 27 months, and one 28 months old. One (a fine combing ram) was grass-fed, the others (strong combing) were partially hand-fed. Grown on deep blacksoil plains and downs of volcanic formation.

308. MARSHALL & SLADE, Glengallan, Warwick. (Latitude, S. 28 deg. 5 min.; longitude, E. 152 deg. 5 min.) (1) Six Fine Combing Ewes' Fleeces; sheep partly housed and partly paddock-fed; 365 days' growth. Age of sheep, 1 to 2 years.

Weight of Fleeces, Skirted as Exhibited.		Weight of Fleeces, Unskirted.	
Lbs.	oz.	Lbs.	oz.
9	8	9	14
9	0	9	8
9	0	10	2
8	12	10	2
8	0	8	8
8	0	9	0

(2) Six Fine Combing Ram Hoggets' Fleeces; 14 months' growth. Age of sheep, 14 months. Partly fed on natural grasses, partly housed.

Weight of Fleeces, Skirted as Exhibited.		Weight of Fleeces, Unskirted.	
Lbs.	oz.	Lbs.	oz.
15	0	17	10
14	8	16	10
13	10	16	3
13	8	15	3
13	0	14	0
13	0	14	0

(3) Six Fine Combing Rams' Fleeces; 365 days' growth. Sheep partly paddock-fed, partly housed.

Age of Sheep.	Weight of Fleeces Skirted, as Exhibited.	Weight of Fleeces, Unskirted.
Months.	Lbs. oz.	Lbs. oz.
24	16 8	20 3
"	16 8	19 4
"	14 8	16 10
"	13 0	14 0
16	14 0	15 0
"	12 0	14 5

(4) Six Fine Combing Rams' Fleeces; 365 days' growth. Sheep grass-fed.

Age of Sheep.	Weight of Fleeces, Skirted as Exhibited.	Weight of Fleeces, Unskirted.
	Lbs. oz.	Lbs. oz.
Aged ...	12 13	13 10
" ...	14 8	15 0
4 years...	15 0	15 11
" ...	13 10	15 8
" ...	14 0	15 8
2 years...	14 0	14 10

(5) Six fine combing Ewes' Fleeces; 365 days' growth. Yearlings, grass-fed.

Weight of Fleeces, Skirted as Exhibited.	Weight of Fleeces, Unskirted.
Lbs. oz.	Lbs. oz.
10 8	11 0
10 4	11 3
10 2	10 6
10 0	11 1
9 12	10 0
9 6	10 8

(6) Six fine combing Ewes' Fleeces; 365 days' growth. Sheep partly housed, partly paddock-fed.

Weight of Fleeces, Skirted as Exhibited.	Weight of Fleeces, Unskirted.
Lbs. oz.	Lbs. oz.
11 0	12 10
10 13	12 10
9 13	10 11
9 0	10 9
9 0	10 3
8 10	9 3

309. SHANAHAN & JENNINGS, Westbrook, Darling Downs. (Latitude, S. 27 degrees 32 minutes; longitude, E. 151 degrees 50 minutes.)—(1) Six 4-tooth Ewes' Fleeces (clothing), with pieces and locks; greasy; 337 days' growth. Sheep grass-fed; grown on red and black soil with stony hills; basaltic formation.

	Weights.
	Lbs. oz.
One Fleece ...	8 8
" ...	8 5
" ...	8 4
" ...	8 2
" ...	8 2
" ...	8 2
	49 7

(2) Six 4-tooth Ewes' Fleeces (clothing), with pieces and locks; greasy; 337 days' growth. Sheep, grass-fed; grown on red and black soils with stony hills; geological formation, basaltic.

	Weights.
	Lbs. oz.
One Fleece ...	7 13
" ...	7 12
" ...	7 11
" ...	7 10
" ...	7 9
" ...	8 1
	46 8

(3) Six clothing Rams' Fleeces; 365 days' growth; partly hand-fed, and, for last six months, grass-fed.

	Weights.
	Lbs. oz.
One Fleece ...	13 11
" ...	13 11
" ...	13 7
" ...	12 6
" ...	12 5
" ...	11 13
	77 5

(4) Six clothing Ewes' Fleeces; 270 days' growth. Sheep fed on grass only.

	Weights.
	Lbs. oz.
One Fleece ...	7 8
" ...	7 7
" ...	7 6
" ...	7 5
" ...	7 4
" ...	7 4
	44 2

310. STRÜVER, F., Pine Creek, Darling Downs.—Maiden Merino Ewe's Fleece—Combing Wood; weight, 26 lbs.; greatest length of staple, 13 inches. Sheep grass-fed.

311. QUEENSLAND CO-OPERATIVE PASTORAL CO., Limited, Pikedale, Stanthorpe. (Lat., S. 28 deg. 40 min.; long., E. 151 deg. 40 min.)—(1) Ten fine clothing Ewes' Fleeces; heavily skirted; 365 days' growth; hot-water spouted. Sheep fed on indigenous grasses. (2) Two clothing Rams' Fleeces; heavily skirted; 365 days' growth; hot-water spouted. Sheep fed on indigenous grasses. (3) Two clothing Hoggets' Fleeces; heavily skirted; 365 days' growth; hot-water spouted. Sheep fed on indigenous grasses. (4) Two combing Ewes' Fleeces; heavily skirted; 365 days' growth; hot-water spouted. Sheep fed on indigenous grasses. (5) Two combing Wethers' Fleeces; heavily skirted; 365 days' growth; hot-water spouted. Sheep fed on indigenous

grasses. (6) Four combing Hoggets' Fleeces; heavily skirted; hot-water spouted. Sheep fed on indigenous grasses.

312. QUEENSLAND LAND AND PASTORAL ASSOCIATION, Limited, Daandine, Darling Downs. (Latitude, S. 27 degrees 5 minutes; longitude, E. 151 degrees.) (1) Six medium combing Rams' Fleeces; 351 days' growth. Sheep fed entirely on indigenous grasses.

WEIGHTS.

Fleeces.	Skirts.	Total.
Lbs. oz.	Lbs. oz.	Lbs. oz.
7 8	3 12	11 4
10 1	4 2	14 3
11 2	5 7	16 9
7 3	4 2	11 5
7 13	3 9	11 6
9 7	4 4	13 11

(2) Six medium combing Hoggets' Fleeces; skirted; 351 days' growth. Sheep fed entirely on indigenous grasses.

WEIGHTS.

Fleeces.	Skirts.	Total.
Lbs. oz.	Lbs. oz.	Lbs. oz.
4 5	3 0	7 5
4 12	2 8	7 4
4 7	2 6	6 13
4 5	2 2	6 7
4 2	2 0	6 2
4 5	2 8	6 13

313. WEST, F. J., St. Helen's, Darling Downs.—Specimens of Clip of Hoggets. Strong combing Merino, taken promiscuously from shearing-floors. Average weight of the whole clip of 14,000 sheep, 6 lbs. 8·5 oz. Fed entirely on indigenous grasses in paddocks.

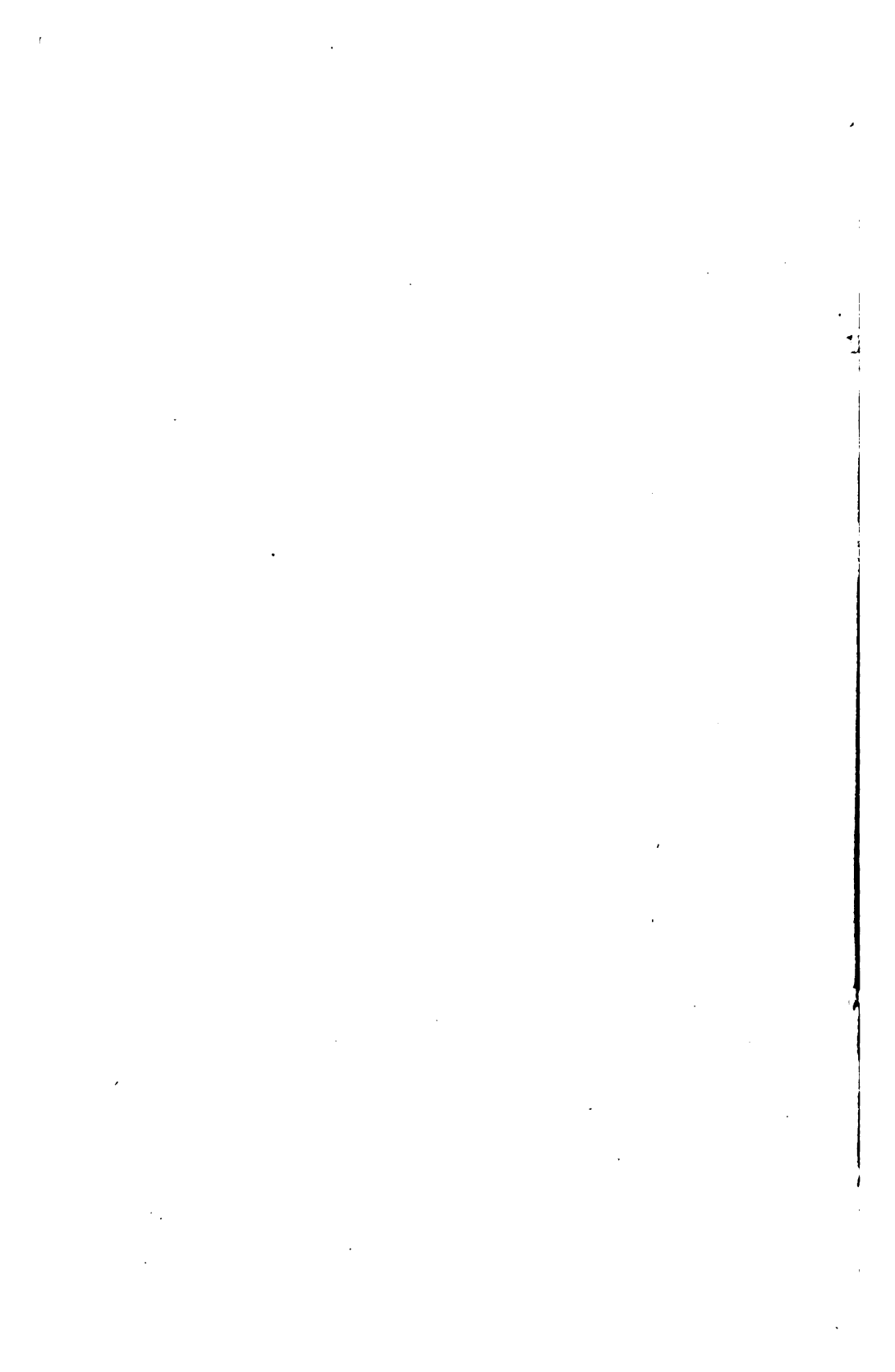
314. WESTERN QUEENSLAND PASTORAL CO., Burenda. (Latitude, S. 25 degrees 45 minutes; longitude, E. 146 degrees 45 minutes.)—Specimens of strong combing Merino Wool, from Burenda stud sheep.

WEIGHTS OF FLEECES.

Description.	Age.	Days' growth.	Weight.
			Lbs. oz.
Ram ...	2-tooth	358	11 3
" ...	"	358	11 4
" ...	4-tooth	358	13 4
" ...	Aged	358	10 0
Ewe ...	2-tooth	358	8 0
" ...	4 "	358	8 6
" ...	4 "	358	8 4
" ...	4 "	358	9 1
" ...	4 "	358	9 1
" ...	4 "	358	10 4
" ...	Full-mouthed	358	11 1

315. WIENHOLT, EDWARD, Goomburra. (Latitude, S. 28 degrees; longitude, E. 152 degrees 10 minutes.)—Six crossbred Hoggets' Fleeces, Lincoln and Merino cross; greasy; 336 days' growth; fed on indigenous grasses.

CLASS 96.—Angora Mohairs—Pure or Crossed.



Group VIIIb.]

[Class 43.

✕

QUEENSLAND WOODS.



CATALOGUE OF THE INDIGENOUS WOODS

CONTAINED IN THE

QUEENSLAND COURT,

COLONIAL AND INDIAN EXHIBITION OF 1886,

WITH A BRIEF POPULAR DESCRIPTION OF THE TREES,
THEIR DISTRIBUTION, QUALITIES, USES
OF TIMBER, Etc., Etc.

BY

FREDK. MANSON BAILEY, F.L.S.,
COLONIAL BOTANIST.

INTRODUCTION.

BEFORE proceeding with an enumeration of the various woods contained in this list, some few precursory remarks are necessary to account for what otherwise might be considered as defects in some of the samples. These defects are principally noticeable in the plank exhibits, several of which will be found to have slightly cracked or split at the ends; for this, allowance will readily be made by practical men when informed that in no case has time been allowed for seasoning, neither could advantage be taken of the proper period for felling the trees. It must be borne in mind that this collection had to be got together hurriedly, leaving no time even for selecting the most suitable tree; thus, the first to hand was felled, and a four-feet length of the stem forwarded to the establishment in Brisbane, where all the exhibits were immediately prepared. This will account also for the stains observable in several of the softer woods, which, being full of sap when cut, became discoloured before reaching their destination—in some cases nearly 2,000 miles from their local habitat. This wood exhibit has been prepared in duplicate, with a view to keeping within the colony, as an adjunct to our already rich herbarium, so valuable a collection of the indigenous woods. The advantage of such a collection to practical men will be of great value, and far exceed the small extra cost of the preparation of the duplicate. The book-block form is somewhat in imitation of one shown at the Royal Agricultural Academy at Hohenheim, in Würtemberg, in 1854.

Although many of the kinds are in sufficient quantity to allow of being exported, this display of the colony's woods has been prepared rather with a view to point out to intending emigrants and others that Queensland possesses in her indigenous vegetation woods suitable for all and every kind of work.

The value of such a collection will not fail to be acknowledged by those who hereafter will be consulted as to suitable trees for arboriculture within the colony. This, as a source of revenue,

cannot be over-estimated. Experienced men will have no hesitation in bearing testimony to the high value of many of the woods, could they be obtained in sufficiently large quantities under favourable commercial circumstances.

The local and native names, with brief popular descriptions, are given to assist in identifying the trees or shrubs in their natural habitat, while references are made to other works where fuller botanical descriptions may be found. The whole range enjoyed by each species is noticed, whether within or beyond Australia; and also the uses to which the wood, or other parts of the trees, may be applied in such other places.

It is usual in works relating to timbers to refer to the weight, strength, and other mechanical features of the different samples dealt with. However, experiments having this end in view can be hereafter made from the material of the present collection. The limited time available for bringing so large a number of woods together, from districts often very remote, has not allowed of such being carried out on this occasion.

The remarks on the colour and character of each sample of wood have been principally supplied by Mr. Carl Matsen, of Messrs. Pettigrew and Son's establishment, where the whole collection of woods has been prepared.

F. M. B.

January, 1893.

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* * The Genera and Vernacular Names incidentally mentioned are printed in italics.

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QUEENSLAND WOODS.

NOTE.—The letters B.P.V. before the notice of the wood indicate the form of exhibit the wood has been worked into, namely :—B., book-block ; P., plank ; V., veneer. Thus, if only a veneer is shown, the initial letter V. is given ; if book-block and veneer, B.V. ; if all three, B.P.V.

Class I.—DICOTYLEDONS.

Order DILLENIACEÆ.

WORMIA, *Rottb.*

1.—W. ALATA, *R. Br.* in DC. Syst. Veg., i., 434 ; Flora Austr., i., 16. A tree of moderate size, with a thick, papery, loose bark of a reddish colour. The leaves large, oval or oblong, with more or less winged stalks. Flowers large, yellow, the petals soon falling away.—On the tropical coast ; often met with on the borders of the coast swamps in Queensland. The tree also inhabits New Guinea.

B.P.V.—WOOD of a dark colour ; cut one way it shows a pretty red “clash,” differing in colour but somewhat resembling that of English Oak. It is close in grain and easy to work ; a good cabinet-maker’s wood.

Order ANONACEÆ.

EUPOMATIA, *R. Br.*

3a.—E. LAURINA, *R. Br.* in Flind. Voy., ii., 597, t. 2 ; Flora Austr., i., 54. A tall shrub with rather large, glossy, laurel-like, deep-green leaves, generally to be met with in Queensland scrubs and also in those of New South Wales.

B.V.—WOOD of a light colour.

Order CAPPARIDEÆ.

CAPPARIS, *Linn.*

4.—C. NOBILIS, *F. v. M.*, Flora Austr., i., 94. Native Pomegranate. A small tree, the stem usually of a crooked irregular growth. Leaves oblong, the young plants and at times the branches of the trees prickly. Flowers showy-white but very fragile. Fruit round, 1 to 2 inches in diameter, eaten by the natives.—Found commonly in the scrubs of Queensland and also in those of the northern portion of New South Wales.

B.P.V.—WOOD of a light or whitish colour, close-grained, firm, and likely to prove useful for carving.

6.—*C. MITCHELLI*, *Lindl.* in *Mitch. Three Exped.*, i., 315; *Flora Austr.*, i., 96. Pomegranate; native name on Cloncurry, "Karn-doo-thal." A small tree with a very dense head of foliage; the leaves oblong and velvety, the shoots furnished with short often hooked prickles. Flowers white, showy, very fragile. Fruit 1 to 2 inches in diameter, the rind unevenly waled, the pulp eaten by the natives.—This is another fruit called Native Pomegranate. An inland tree often found growing in clumps in open country, in North Australia, Queensland, New South Wales, and South Australia.

B.P.V.—Wood whitish, close-grained, hard; suitable for engraving, carving, and similar purposes.

Order BIXINEÆ.

COCCLOSPERMUM, *Kunth.*

7.—*C. GREGORII*, *F.v.M.*, *Fragm.*, i., 74; *Flora Austr.*, i., 106. A small tree, the leaves divided into about 7 narrow lobes. Flower-panicles not much branched. Fruit in a pear-shaped capsule, the seeds enveloped in wool.—Tropical Queensland.

B.P.V.—Wood of a dark colour, soft and spongy. The log from which the samples were worked was received from the Endeavour River as *C. Gregorii*, but the specimens were not sufficient to determine the species; but it most probably is *C. Gillivraei*, Benth.

Order PITTOSPOREÆ.

PITTOSPORUM, *Banks.*

11.—*P. PHYLLEAEOIDES*, *DC.*, *Prod.*, 347; *Flora Austr.*, i., 112. A small tree with usually drooping branches and long narrow leaves. Flowers fragrant. Fruit about the size of a cherry, opening in 2 valves showing a mass of sticky seeds.—Common to all the colonies, in the interior. In Queensland it is usually met with in brigalow scrubs.

B.P.V.—Wood close-grained, light in colour, and very hard.

BURSARIA, *Cav.*

13.—*B. INCANA*, *Lindl.* in *Mitch. Trop. Austr.*, 224; *Flora Austr.*, i., 115. Native Olive. A small erect tree with olive-like leaves, usually hoary-white and 2 or more inches long. Flowers white, small, in terminal panicles.—This tree is frequently met with in the interior and in the Gulf country, and is not uncommon on the Main Range and Darling Downs.

B.P.V.—Wood of a white or light colour; seems suitable for engraving and similar purposes.

CITRIBATUS, *A. Cunn.*

13a.—*C. MULTIFLORUS*, *A. Cunn.* in *Loud. Hort. Brit.*, i., 585. Usually a small thorny bush, but at times growing into a small tree. Leaves toothed, small, nearly orbicular, or if long then wedge-shaped, but seldom over $\frac{1}{2}$ -inch long. Flowers small in the axils of the leaves, succeeded by small round berries of an orange colour.—The shrub is found in South Australia, New South Wales, and Extratropical Queensland.

B.V.—Wood close in the grain and very tough; light-coloured.

14.—*C. PAUCIFLORUS*, *A. Cunn.* in *Loud. Hort. Brit.*, i., 585. Usually a larger plant than the last, with fewer flowers and much larger fruit, this latter of a softer nature and often 1 inch in diameter.—Tropical Queensland and North Australia; sometimes but very rarely met with out of the tropics.

B.V.—Wood close-grained, of a light uniform yellowish colour, and hard.

Order GUTTIFERÆ.

CALOPHYLLUM, *Linn.*

16.—*C. INOPHYLLUM*, *Linn.*; *W. et Arn.*, *Prod.*, i., 103. The Alexandrian Laurel or Domba-tree. A tall tree, the bark longitudinally and often transversely cracked, forming squares of a yellowish colour. Leaves oblong, large, marked with fine parallel transverse veins. Flowers white. Fruit globular, over 1 inch diameter.—Tropical Queensland coast, New Guinea, and several places in India. The tree also inhabits South India, Burmah, and Andaman Islands, where the wood is used for masts, spars, railway sleepers, &c.

The following analysis of the fruit is by Mr. K. T. Staiger, F.L.S.:—Shells, 62·5 per cent.; kernels, 37·5 per cent. Greenish-yellow oil, 43 per cent.; dry residue, 27 per cent.; moisture, 30 per cent. Ashes of whole kernels, 1·66 per cent.; ashes of exhausted residue, 6·15 per cent. Mr. Staiger finds the green oil on saponification gives a bright-yellow soap, the green pigment of the oil having changed into a bright yellow.

B.P.V.—Wood of a reddish colour and pretty wavy figure, strong and durable; a useful wood for the joiner and cabinet-maker.

16a.—*C. TOMENTOSUM*, *Wight; Hook.*, *Fl. Ind.*, i., 274; *Fragm.*, ix., 174. Keena or Poon Spar tree. A tall tree, the bark longitudinally cracked, the young shoots and fruits somewhat downy. Leaves with strong midrib and fine, thread-like, numerous, parallel, transverse veins, tapering towards each end. Fruit in spikes shorter than the leaves.—Queensland habitat, from Rockingham Bay to the Endeavour River; also in India.

This yields the Poon spars of commerce. It is used for bridgework in India, where the seeds are also said to give an oil.

B.V.P.—Wood of a red colour, strong and durable; also a useful wood for the joiner and cabinet-maker.

Order MALVACEÆ.

HIBISCUS, *Linn.*

17.—*H. HETEROPHYLLUS*, *Vent.*, *Hort. Malm.*, t. 103; *Flora Austr.*, i., 212. A tall shrub or small tree, the branches and foliage rough or prickly, the leaves entire or divided into 2 or more finger-like lobes. Flowers large, white with a purple centre.—Common in most Queensland scrubs and borders of rivers, also in New South Wales.

B.V.—Wood of a pale-yellow colour and open grain, smooth and tough; suitable, probably, for making musical instruments, as it is a good conductor of sound.

19.—H. TILIACEUS, *Linn.*; *DC.*, *Prod. i.*, 454; *Flora Austr.*, i., 218. Cotton-tree; native name, "Talwalpin." A small tree with large roundish leaves, hoary-white on the under side. Flowers large, yellow with crimson centre.—Abundant on the Queensland sea-coast and also the islands of the Pacific, the West Indies, and New Guinea; in fact, on the tropical coasts of both continents.

In Central America the fibre is known as "majagua," and in Bengal as "bola," and being little affected by moisture is therefore selected by surveyors for measuring lines.

B.P.V.—WOOD close-grained, colour invisible green, beautifully marked, easy to work, and takes a good polish; supposed by some to resemble Pollard Oak.

LAGUNARIA, *G. Don.*

20.—L. PATERSONI, *Don.*, *Gen. Syst.*, i., 485; *Flora Austr.*, i., 218. *Var. bracteata*. A small tree, the foliage and shoots covered by close, minute, scurfy scales, the leaves on rather long stalks, oblong, 3 to 4 inches long, 1 inch wide at the base, but tapering towards a blunt point, the upper surface green, the under surface nearly white. Flowers pink, slightly downy outside, on short stalks in a cup of 3 to 5 lobes.—Found at Bowen and a few other parts of North Queensland.

B.V.P.—WOOD firm, close in grain and nearly white, easy to work; would be useful.

BOMBAX, *Linn.*

22.—B. MALABARICUM, *DC.*, *Prod.*, i., 479; *Flora Austr.*, i., 223. Silk-cotton tree. A large tree with the branches in whorls; young branches often covered with short conical prickles, dropping the leaves in winter. Leaves of 5 to 7 leaflets. Flowers large, red, in clusters near the ends of the branches. Seed-capsule oblong, the seeds enveloped in a silky wool.—Found at the Endeavour River and North Australia; also throughout India and Burmah.

In India the wood is not considered durable except under water. The cotton which surrounds the seeds is used for stuffing pillows, &c.

B.P.V.—WOOD light, coarse-grained, and soft.

Order STERCULIACEÆ.

STERCULIA, *Linn.*

23.—S. QUADRIFIDA, *R. Br.* in *Benn. Pl. Jav. Rar.*, 233; *Flora Austr.*, i., 227. A tree of medium size, with oval leaves 2 to 5 inches long, covered more or less with star-like hairs; the bunches of greenish flowers near the ends of the branches succeeded by bright red pods containing several oval black seeds, which are excellent eating.—Found in the Queensland scrubs both north and south of Brisbane; also in North Australia and New South Wales.

B.P.V.—WOOD light-grey, close-grained, light and easily worked. The bark yields a useful fibre, and the seeds are edible and of agreeable flavour.

26.—S. ACERIFOLIA, *A. Cunn.* in *Loud. Hort. Brit.*, 392; *Flora Austr.*, i., 229. Flame-tree. A large tree, partly or wholly dropping its leaves in winter, with a smoothish bark, and large more or less

lobed leaves on long stalks. Flowers bell-shaped, rich red, in large, drooping, straggling panicles, succeeded by pods 4 to 5 inches long.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood soft, light, and of a light colour.

27.—*S. DIVERSIFOLIA*, *G. Don.*, Syst., i., 516; *Flora Austr.*, i., 229. A tree, sometimes large but usually small, with a thick somewhat smooth stem, and glossy variously lobed leaves, the lobes or leaves with long narrow points. Flowers bell-shaped, of a dull-brown colour. Pods 2 to 4 inches long, the seeds coated with prickly hairs.—Found on downs country and also ranges of Southern Queensland, and in the interior of New South Wales and Victoria.

B.P.V.—Wood soft, coarse-grained, and of a light-yellow colour; easily worked.

TARRIETIA, *Blume.*

29.—*T. ARGYRODENDRON*, *Benth.*, *Flora Austr.*, i., 230. Stave-wood; native name, "Boiong." A tall tree, the foliage silvery on the under side. Leaves usually of 3 leaflets. Flowers in panicles, white, small, and numerous. Fruit with a long straight wing.—Common to the scrubs of Queensland, both north and south; also in New South Wales.

B.P.V.—Wood of light colour, close-grained, tough and firm; may be used as a substitute for English Beech.

29a.—*T. TRIFOLIOLATA*, *F. v. M.*, *Fragm.*, ix., 43. Stave-wood. A tall tree, the foliage of a coppery colour on the under side. Leaves usually of 3 leaflets. Flowers small, white, in spreading panicles. Fruit with a long straight wing.—Plentiful in the North Queensland scrubs, also here and there in the South and in New South Wales.

B.P.V.—Wood like the last, but of a darker colour.

29b.—*T. ARGYRODENDRON* is probably a form of *T. trifoliolata*, and not *T. argyrodendron* as on the label. The leaflets are much narrower than usual, and they are rather coppery than silvery on the under side.—The specimen was received from the Endeavour River.

B.P.V.—Wood of a light-gray colour, close in the grain, hard and tough, useful for making tool-handles.

30.—*T. ACTINOPHYLLA*, *Bail.*, Syn. Ql. *Flora*, i., 37. A very large tree, with spreading head of a deep-green dense foliage. Leaves of from 3 to 9 leaflets, measuring from 3 to 9 inches each, radiating from the top of the stalk like the ribs of an umbrella. Flowers white, numerous in long loose panicles. Fruit with a broad straight wing.—Found on the ranges of Southern Queensland.

B.P.V.—Wood very tough, of a stringy straight grain resembling English Ash; will bend better than that wood, which points it out as a suitable wood for chair-making, carriage-work, axe-handles, &c.

HERITIERA, *Dry.*

31.—*H. LITTORALIS*, *Dry.* in Ait. Hort. Kew, iii., 546; *Flora Austr.*, i., 231. Red Mangrove or Looking-glass tree. A tree of often crooked growth but sometimes attaining a great size. Leaves

large, oval, silvery on the under side. Flowers small, numerous in loose panicles. Fruit hard, ovoid, 2 or 3 inches long, somewhat boat-shaped, with a sharp keel.—Abundant in the swamps of the Queensland tropical coast, also in New Guinea and India.

In India, as in Australia, this tree is found on the coast and in tidal forests. In Bengal it is known by the name "Sundri," is considered durable, tough, and heavy, and is used extensively in boat-building, buggy-shafts, and furniture.

B.P.V.—Wood firm, close-grained, of a dark colour.

COMMERSONIA, *Forst.*

32.—*C. ECHINATA*, *Forst.*; *DC.*, *Prod. i.*, 486; *Flora Austr.*, i., 243. A small tree, the leaves and young branches often covered by a cottony down. Leaves of the young plants resembling those of the common Mallow in shape, often large; those of the older tree oval and about 3 inches long. Fruit dry, round, bristly.—Queensland scrubs; also in New South Wales, New Guinea, the Indian Archipelago, and the Pacific Islands.

B.P.V.—Wood soft, close-grained, white and light, yields a strong fibre; used by the natives for making fishing lines and nets.

Order TILIACEÆ.

ELÆOCARPUS, *Linn.*

33a.—*E. KIRTONII*, *F. v. M. (inedit.)*; *Suppt. Syn. Ql. Fl.* White Beech of Bunya Mountains. A tall tree, often attaining more than 100 feet in height, the young growth silky. Leaves narrow, from 4 to 8 inches long, toothed, and showing the netted veins very prominently. Drupe ovoid.—This tree seems to be only found on high mountains. The only places where it is known in Queensland are the Bunya Mountains and on Mount Mistake; and it was first found in similar situations in New South Wales.

B.P.V.—Wood light-brown colour, fine-grained, suitable for furniture. It somewhat resembles English Sycamore.

33c.—*E. BANCROFTII*, *F. v. M. et Bail.* in *Proc. Roy. Soc. Ql.*, 1885. A lofty handsome tree, the oval leaves usually somewhat clustered near the ends of the rather stout branchlets. Flowers rather large and profuse, much sought after by various honey-eating birds. Fruit roundish, the stone pitted but smooth, containing a single kernel which is of an agreeable flavour.—Scrubs of the Johnstone River, Queensland.

B.P.V.—Wood hard and durable, light with a darker colour in the centre; likely to prove useful for sheaves for blocks.

34.—*E. OBOVATUS*, *G. Don.*, *Gen. Syst.*, i., 559; *Flora Austr.*, i., 281. Native name, "Woolal." A medium-sized or small tree, with oval leaves 2 to 4 inches long, and small white flowers succeeded by oval blue fruit.—This tree is met with in several localities in Southern Queensland, New South Wales, North Australia, and also in New Guinea.

B.P.V.—Wood light-coloured, close-grained, firm, and easy to work.

36.—*E. GRANDIS*, *F. v. M.*, *Fragm.*, ii., 81; *Flora Austr.*, i., 281. Brisbane Quandong. A large tree, the branches almost forming whorls round the stem; leaves long, pointed, and more or less bordered by small teeth. Flowers in large bunches of a dirty-white colour. Fruit round, about 1 inch in diameter; stone rough.—Found in the rich scrubs of Queensland both north and south.

B.P.V.—Wood of a light colour, grain close; a tough timber.

Order LINEÆ.

ERYTHROXYLON, *Linn.*

37.—*E. AUSTRALE*, *F. v. M.* in *Trans. Vict. Inst.*, iii., 22; *Flora Austr.*, i., 284. A slender shrub with oblong leaves about 1 inch long, bearing small flowers in the axils of the leaves, which are succeeded by a small 1-seeded drupe.—Found in the brigalow scrubs of Queensland.

Mr. Staiger finds that the leaves do not contain cocaine, but they contain coca-tannic acid, and also a yellow dye-stuff which may prove of value.

B.V.—Wood red in colour, close in grain, and prettily marked.

Order RUTACEÆ.

BOSISTOA, *F. v. M.*

39.—*B. SAPINDIFORMIS*, *F. v. M.*, *Flora Austr.*, i., 359. The "Towra" of the natives. A small erect tree with large, opposite, rough, pinnate leaves, with from 7 to 11 opposite leaflets, which are often more than 8 inches long and bordered by saw-like teeth. Flowers in a terminal panicle, small. The fruit dry, rough outside.—Found in the scrubs south of Brisbane and some of the northern scrubs, also in New South Wales.

B.P.V.—Wood close in the grain, of a yellow colour, liable to split in drying.

MELICOPE, *Forst.*

40.—*M. NEUROCOCCA*, *Benth.*, *Flora Austr.*, i., 360. A small tree of rather scanty foliage. Leaves pinnate, of 1 or 2 pair of leaflets and an odd one, the leaflets of unequally sized pairs, 2 to 4 inches long, sprinkled with a few hairs. Flowers white, very small, the fruits strongly ribbed, about $\frac{1}{4}$ -inch broad.—Found in the range scrubs of Southern Queensland; also at Wide Bay and in the northern parts of New South Wales.

B.P.V.—Wood very hard and close-grained, of a uniform light-yellow colour.

EVODIA, *Forst.*

41.—*E. MICROCOCCA*, *F. v. M.*, *Fragm.*, i., 144; *Flora Austr.*, i., 361. A tall tree, with 3-leafletted leaves and rather dense small bunches of flowers, the rough little fruits containing shining black seeds.—Mountain scrubs, Southern Queensland and New South Wales.

B.P.V.—Wood of a light-yellow colour, close in the grain and tough.

42.—*E. ACCEDENS*, *Blume*, *Bijdrag. Fragm.*, ix, 102. Native name, "Bunnec-walwal." A tall tree with a smooth bark, the leaves rather large, of 8 leaflets. Flowers pink, turning bluish as they die away.—Not uncommon in rich scrubs, both north and south, in Queensland; also in New South Wales.

B.P.V.—Wood very white; light, and soft; a good substitute for the European Lime-tree.

MEDICOSMA, *Hook.*

43.—*M. CUNNINGHAMI*, *J. D. Hook.* in *Flora Austr.*, i., 363. Tree of medium size with smooth bark, but stem often crooked and knarled. Leaves opposite, oblong, the stalk jointed. Flowers rather large, white, woolly.—A tree frequently met with in the Queensland scrubs to the south, reaching into New South Wales.

B.P.V.—Wood of a light-yellow colour, close in the grain; a good cabinet-maker's wood.

ZANTHOXYLUM, *Linn.*

44a.—*Z. VENEFICUM* (sp. nov.). (So named from the poisonous nature of its wood.) Tree medium-sized, glabrous, the branches prickly. Leaves pinnate, with from 4 to 7 opposite oval-oblong leaflets, 3 to 6 inches long and from 1 to 2 inches broad, the points blunt, the base unequal-sided, the principal veins almost transversely spreading and prominent, texture thin. Flowers in a terminal panicle; no fruit seen, and the flowers only in early bud.—Johnstone River scrubs.

The wood has been found by Dr. T. L. Bancroft to possess poisonous properties.

B.P.V.—Wood of a yellow colour, close in grain, and easy to work.

45.—*Z. BRACHYACANTHUM*, *F. v. M.*, *Pl. Vict.*, i., 108; *Flora Austr.*, i., 363. Satinwood. A small tree, the stem and branches usually covered by short conical prickles. Leaves deep-green, of from 10 to 13 pairs of leaflets, often grassy. Flowers small, white, in bunches, the small capsules opening and showing the black seeds when ripe.—A common tree in the range scrubs of Queensland and in the northern parts of New South Wales.

B.V.—Wood of a glossy yellow colour, superior to the wood used in Europe under the name of Satinwood; a valuable wood for cabinet-work.

GEIJERA, *Schott.*

45a.—*G. MUELLERI*, *Benth.*, *Flora Austr.*, i., 364. A scrub tree of medium size, with dense head of deep-green glossy foliage, which give out a strong fragrance on being rubbed in the hand. Leaves ovate. Flowers small, white, in straggling bunches.—Queensland, from Brisbane northward.

B.P.V.—Wood with a beautiful dark-clouded heartwood, the rest of a light colour, all hard and close-grained, and would suit well for cutting into veneers for cabinet-work.

46.—*G. SALICIFOLIA*, *Schott.*, *Rut.*, t. 4; *Flora Austr.*, i., 364. A moderate-sized tree, with at times the under side of the leaves slightly hoary, the leaves somewhat oblong, 3 or 4 inches long.

Flowers very small, white.—A common Queensland tree, also in New South Wales, where, according to C. Moore's "Woods of New South Wales," ink of good quality has been made from its bark.

B.P.V.—WOOD of a light colour, no dark heartwood; hard and of a close grain; perhaps might be suitable for engraving.

47.—*G. PARVIFLORA*, *Lindl.* in *Mitch. Trop. Austr.*, 102; *Flora Austr.*, i., 364. A small tree with rough bark and drooping branches, the leaves narrow, 3 to 6 inches long and not more than $\frac{1}{4}$ -inch broad, the midrib prominent. Flowers small, white.—Brigalow scrubs north and south in Queensland; also in New South Wales, Victoria, South Australia, and Western Australia.

B.P.V.—WOOD hard and tough, close in grain, of a yellow colour and agreeable fragrance.

ACRONYCHIA, *Forst.*

50.—*A. LEVIS*, *Forst.*, *Char. Gen.*, 53, t. 27; *Flora Austr.*, i., 366. At times a tall tree, with irregularly opposite or alternate oblong leaves, from $1\frac{1}{2}$ to 4 inches long, jointed on to the footstalk. Flowers greenish-white, fruit often angular.—A scrub tree frequently met with in Queensland and New South Wales.

B.V.—WOOD close-grained, hard and of a light colour.

HALFORDIA, *F. v. M.*

52.—*H. DRUPIFERA*, *F. v. M.*, *Fragm.*, v., 43. A small tree with oblong leaves 3 or 4 inches long, and terminal panicle of white flowers succeeded by oval or oblong purplish berries.—Frazer's Island, Queensland.

B.P.V.—WOOD of a yellowish colour, close in grain, tough and durable.

52a.—*H. SCLEROXYLA*, *F. v. M.*, *Fragm.*, viii., 142. A tree of medium size, the leaves rather larger and not so thick as the last; flowers similar, but fruit red.—Rockingham Bay and Johnstone River, Queensland.

B.P.V.—WOOD of a grey colour, fine in the grain, tough and strong.

ATALANTIA, *Corr.*

54.—*A. GLAUCA*, *J. D. Hook.* in *B. and H. Gen. Pl.*, i., 305; *Flora Austr.*, i., 370. Kumquat or Lime of the Downs. Usually a shrub, but growing in some localities into a tree with a knotty stem. Foliage grey, the leaves wedge-shaped, 1 to 2 inches long. Flowers fragrant, white. Fruit soft, acid, round, about $\frac{1}{2}$ -inch in diameter.—Usually found on downs country in Queensland, north and south.

B.P.V.—WOOD of a bright yellow, with numerous brown streaks or veins close-grained and easily worked. From the fruit is made a useful preserve.

CITRUS, *Linn.*

55.—*C. AUSTRALIS*, *Planch.* in *Hort. Donat.*, 18; *Flora Austr.*, i., 371. Native Orange. Usually a small tree, but in some scrubs 60 or more feet high with straight erect trunk, the whole often thorny. Leaves

narrow or nearly round, deep-green. Flowers pinkish. Fruit round, from 1 to nearly 2 inches in diameter.—Brisbane River and ranges about.

B.P.V.—Wood of a light-yellow colour, close-grained, hard and durable, useful for cabinet-work. It might probably serve for engraving. The fruit makes a good preserve.

56.—*C. AUSTRALASICA*, *F. v. M.*, *Fragm.*, i., 26; *Flora Austr.*, i., 371. Finger-lime. A tall thorny shrub with small narrow leaves and white flowers, the fruit having an agreeable acid flavour, 2 to 4 inches long and about 1 inch in diameter.

B.V.—Wood close-grained, of a yellowish colour. The fruit makes very good jam.

Order SIMARUBEÆ.

AILANTHUS, *Desf.*

57.—*A. IMBERBIFLORA*, *F. v. M.*, *Fragm.*, iii., 42; *Flora Austr.*, i., 373. A large tree, the leaves with 15 to 17 narrow-ovate leaflets, the flowers in narrow panicles, fruit with a wing 2 inches long.—In scrubs near Rockhampton, and also at Mount Perry.

B.V.—Wood yellow, porous, soft and light.

CADELLIA, *F. v. M.*

57a.—*C. MONOSTYLIS*, *Benth.*, *Flora Austr.*, i., 375. A tall shrub with deep-green narrow-ovate leaves. Flowers small in straggling bunches; fruit oval, like purple plums.—Mount Mistake Range.

B.P.V.—Wood of a yellowish colour, somewhat resembling some kinds of Walnut and Satinwood. It is of a pretty grain, and would be useful for cabinet-work and for toy-making.

Order BURSERACEÆ.

GARUGA, *Roxb.*

57b.—*G. FLORIBUNDA*, *Decne.* in *Nouv. Annal. du Mus.*, iii., 477; *Muell. Census*, 25; *Flora Austr.*, i., 377. A tree of medium size, the branches marked with broad scars of the fallen leaves. Leaves of 7 or 8 pairs of leaflets, crowded at the ends of the branches. The flower-panicle broad, terminating leafless bunches; flowers hoary.—Found at the Endeavour River in Queensland, North Australia, and at Timor.

B.P.V.—Wood tough, close-grained, firm and easy to work, colour grey.

CANARIUM, *Linn.*

58.—*C. AUSTRALASICUM*, *F. v. M.*, *Fragm.*, iii., 15; *Flora Austr.*, i., 377. A tree of medium size, the thick branches showing scars where the fallen leaves were attached, the leaves composed of about 7 harsh leaflets, the veining very conspicuous. The flowers are very small, in straggling bunches, succeeded by oval fruits of the size of olives.—Found only in the tropics in Queensland, and North Australia.

B.P.V.—Wood of a grey colour, dark towards the centre; works easily, and would suit for lining-boards for houses.

Order MELIACEÆ.

TURRÆA, *Linn.*

59.—*T. PUBESCENS*, *Hellen.*; *Willd.*, Spec. Pl., ii., 555; *Flora Austr.*, i., 379. A small tree losing the leaves in winter and often flowering before they appear again. Leaves oval, often hairy, 2 to 4 inches long. Flowers showy and fragrant, white, with narrow long petals. Fruit 5-celled.—Common within the tropics and also some of the southern scrubs, on ranges in Queensland, and also in New Guinea and India.

B.V.—Wood close-grained and hard, the centre very dark, the outer part somewhat of a bright-yellow colour.

MELIA, *Linn.*

60.—*M. COMPOSITA*, *Willd.*; *Willd. et Arn.*, Prod., 177; *Flora Austr.*, i., 380. White Cedar. A large tree but flowering as a shrub; loses its leaves in winter. Leaves mealy, much divided. Flowers blue, fragrant, succeeded by oval yellow berries containing a fluted stone.—Abundant in Queensland scrubs, and in those of the northern parts of New South Wales; also in New Guinea, India, and Burmah.

B.P.V.—Wood easy to work, of a light-red colour, soft and light.

DYSOXYLON, *Blume.*

61a.—*D. MUELLERI*, *Benth.*, *Flora Austr.*, i., 381; "Kedgy-kedgy," or Pencil Cedar. A tall tree, the leaves from 1 to 2 feet long, composed of from 11 to 21 narrow oval leaflets, which are from 3 to 6 inches long. Flower-panicle nearly 1 foot long, branched and bearing numerous flowers. Fruit nearly without hairs.—Found in scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood of a red colour, prettily marked; a useful wood for the joiner and cabinet-maker.

62.—*D. RUFUM*, *Benth.*, *Flora Austr.*, i., 382. Usually a small tree with leaves about 2 feet long, the leaflets 3 to 6 inches long, more or less downy, the flower-panicles scarcely branched, the round fruits covered with rigid golden hairs.—Scrubs of Southern Queensland and New South Wales.

B.V.—Wood of a light-yellow colour, hard and close-grained; the figure-lines small.

63.—*D. RUFUM*, VAR. *GLABRESCENS*.—A large tree, very like the last in the fruit, but the leaves less downy.—Rockhampton scrubs.

B.P.V.—Wood of a straw colour, coarse in the grain, easy to work.

63a.—*D. FRASERIANUM*, *Benth.*, *Flora Austr.*, i., 381. Pencil Cedar. A large handsome tree. Leaves of from 5 to 9 leaflets, the leaflets about 3 to 6 inches long, and usually having tufts of hairs in the axils of the principal veins on the back or under surface. Fruit somewhat pear-shaped.—Mountain scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood of a red colour, close-grained, and easy to work; a useful wood for cabinet-work and lining-boards.

63b.—*D. OPPOSITIFOLIUM*, *F. v. M.* A medium-sized tree with opposite leaves of about 8 leaflets. Flowers in short bunches; fruit about $\frac{1}{2}$ -inch in diameter.—Rockingham Bay to Endeavour River.

B.P.V.—Wood with a small prettily-marked heartwood, and a large quantity of yellow wood towards the bark; grain close, easily worked, and fragrant; a useful wood for both joiner and cabinet-maker.

AMOORA, *Roxb.*

64.—*A. NITIDULA*, *Benth.*, *Flora Austr.*, i., 383. A tall tree with a dense foliage, the leaves of 2 or 4 opposite leaflets about 4 inches long, of a thick consistency; the panicle of few flowers. Fruit pear-shaped; seeds globular.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood of a light colour, tough, and close in grain.

OWENIA, *F. v. M.*

66.—*O. ACIDULA*, *F. v. M.* in Hook. *Kew Misc.*, ix., 303; *Flora Austr.*, i., 385. Sour Plum, Emu Apple. A small tree with a dense head of a lively green foliage, the branches pendulous. Leaves with from 9 to 30 narrow leaflets, about an inch or more long. Flowers in narrow panicles, very small. Fruit an inch or more in diameter, reddish and very sour.—Frequently met with in the interior in Queensland, New South Wales, and South Australia.

B.P.V.—Wood reddish, close-grained, hard, but easy to work; useful for cabinet-making and turnery.

67.—*O. VENOSA*, *F. v. M.* in Hook. *Kew Misc.*, ix., 304; *Flora Austr.*, i., 386. A large tree; leaves of from 6 to 8 oblong leaflets, prominently veined and often notched at the end, 2 to 4 inches long, the stalk more or less winged. The flowers in long straggling bunches, very small. Fruit round, about 1 inch in diameter.—A common tree in the scrubs of North and South Queensland.

B.P.V.—Wood of a reddish colour, hard, of close grain, very strong and durable; useful for various purposes.

CARAPA, *Aubl.*

68.—*C. MOLUCCENSIS*, *Lam.*; *DC.*, *Prod.*, i., 626; *Flora Austr.*, i., 387. A tree of medium size, the bark falling off in scale-like patches, with leaves of usually 4 leaflets some 2 or 3 inches long, the flowers rather small, but the fruit often from 3 to 5 inches in diameter, containing large angular seeds.—Frequently met with on the tropical coast of Queensland, Northern Australia. A sea-coast tree also of Tropical Asia and Africa.

In India and Burmah an oil is said to be obtained from its seeds.

B.P.V.—Wood resembling Red Cedar, of close grain, prettily marked; a good cabinet wood.

CEDRELA, *Linn.*

69.—*C. TOONA*, *Roxb.*, *Pl. Corom.*, iii., 33, t. 238; *Flora Austr.*, i., 387. Red Cedar or Toon tree; native name at Brisbane, "Mamin" and "Mugurpul"; at Wide Bay, "Woota." A very large tree with spreading head, losing its leaves in the winter; the leaves of from 11 to

17 leaflets, the flowers in long panicles. Seed-capsules about 1 inch long.—A common tree of the Queensland and New South Wales scrubs, bordering rivers and creeks; found also in India and Burmah.

The timber of this tree, which is abundant in India and Burmah, is that known in the English market as Moulmein Cedar. In North-west India, as in Australia, it is used for furniture, carvings, &c.; in Bengal and Assam, in making tea-boxes.

B.P.V.—Wood beautifully grained, of a red colour, easy to work and very durable. The wood most generally in use with cabinet-makers in Queensland.

FLINDERSIA, *R. Br.*

70.—*F. AUSTRALIS*, *R. Br.* in Flind. Voy., ii., 595, t. i.; Flora Austr., i., 388. Sometimes called Crow's Ash. A tree of medium size, frequently if not always losing its leaves in winter. The bark, like that of the Cedar, falling off in irregular-shaped woody patches or scales; the leaves alternate, of 3 to 6 oblong leaflets, generally crowded at the ends of the branches; the flowers white, in rather dense bunches. Fruit about 3 inches long, very rough, not separating into distinct boat-like portions, but opening to near the base, so as to allow of the escapement of the placentas and winged seeds.—Of frequent occurrence in range scrubs, Queensland; also in New South Wales.

B.P.V.—Wood yellow, close-grained, very hard, and of great strength and durability; does not rust iron.

71.—*F. SCHOTTIANA*, *F. v. M.*, Fragm., iii., 25; Flora Austr., i., 388. A tall tree, stem smoothish, erect. Leaves large, opposite, of from 8 to 12 leaflets, which measure from 4 to 6 inches long, and more or less covered by soft short down. Flowers numerous in a large spreading panicle. Fruit large, splitting into separate boat-like pieces, the outside covered by prickly processes.—River scrubs in both North and South Queensland, also in New South Wales.

B.V.—Wood of a pale-yellow colour, close-grained and firm; useful for cabinet-work.

72.—*F. OXLEYANA*, *F. v. M.*, Fragm., i., 65; Flora Austr., i., 389. Common Yellow-wood. Usually a tall erect tree having a smooth bark; the leaves crowded at the ends of the branches. Leaves opposite, of from 4 to 10 leaflets, with or without an odd one shortly pointed, and from 2 to 4 inches long, often curved. Flowers in a loose panicle. Fruit dividing when ripe into boat-shaped pieces 2 to 4 inches long, rough on the back.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood of a bright-yellow colour, strong and fibrous, used in cabinet-work. It is not readily attacked by the white ant, and is useful for handscrew-making and buggy-shafts.

73.—*F. MACULOSA*, *Lindl.* (As an *Elæodendron* in Mitch. Trop. Austr., 384; also in part in Flora Austr., i., 389.) Spotted tree. A small tree with linear, obtuse, entire, opposite leaves of from 1 to 2 inches long, the veins not prominent. Flowers very small in terminal panicles of 1 to 3 inches long, and but little branched. Fruit small, rough, about 1 inch long, dividing into boat-shaped pieces.—Cunnamulla, in Queensland.

B.P.V.—Wood bright-yellow, nicely marked, close in grain, and very hard; would suit well for bearings of shafting.

73a.—*F. BOURJOTIANA*, *F. v. M.*, *Fragm.*, ix., 183. A noble tree, with dense deep-green foliage. Leaves of from 1 to 9 oval leaflets, several inches long; the flowers small, in very spreading panicles. Fruit rough, oblong, about 3 inches long, breaking up as in most species.—Found first at Cardwell, since in scrubs further north.

B.P.V.—Wood strong, durable, easily worked, of a light colour.

73b.—*F. STRZELECKIANA*, *F. v. M.*, *Fragm.*, i., 65, and *Flora Austr.*, i., 389, in part. Spotted tree. A small tree, the bark hard and falling off in patches, leaving light-coloured indentations in the bark. Leaves of 1 or 2 pairs of narrow-linear leaflets about 1 inch in length and not $\frac{1}{4}$ -inch broad, the leaf-stalk winged. Flowers in terminal short panicles. Capsules about 1 inch long, and when ripe dividing into boat-shaped pieces.—Brigalow scrubs, Leichhardt district, Queensland.

B.P.V.—Wood of a yellow colour, close in the grain, hard, strong, and durable.

73c.—*F. STRZELECKIANA*, *F. v. M.* Var. *latifolia*. A small tree, the leaves of few leaflets about 2 or 3 inches long and nearly 1 inch broad. Flower in terminal panicle, the capsule about $1\frac{1}{2}$ to 2 inches long, dividing into separate boat-shaped pieces.—Main Range, Queensland.

B.P.V.—Wood hard, close-grained yellow, strong and durable.

74.—*F. BENNETTIANA*. *F. v. M.*, *Flora Austr.*, i., 389; *Fragm.*, ix., 131, and xi., 135. A large tree, with opposite leaves of from 3 to 5 oval leaflets, 2 to 3 inches long, or longer on some trees, the stalks angular. Flower panicle large, or at times short. Fruit 2 to 3 inches long, rough.—Scrubs of South Queensland and New South Wales.

B.V.—Wood hard, fine in the grain and light in colour.

Order OLACINEÆ.

XIMENIA, *Linn.*

74d.—*X. AMERICANA*, *Linn.*; *DC.*, *Prod.* i., 533; *Flora Austr.*, i., 391. A small crooked-stemmed tree, the branches often furnished with sharp spines. Foliage scanty; leaves ovate, 1 to 2 inches long. Flowers sweet-scented, white; the petals hairy inside with white hairs. Fruit a yellow plum of about 1 inch diameter.—Found at Clermont, in Queensland; also in North Australia, and in tropical regions out of Australia, of both the New and Old World.

Roxburgh says that the wood of this is used in India as a substitute for Sandal-wood.

B.P.V.—Wood close-grained, tough, hard, and light in colour. It works like English Box, and might be suitable for engraving.

VILLARESIA, *Ruiz et Pav.*

74e.—*V. MOOREI*, *F. v. M.*, *Flora Austr.*, i., 395. A tall tree, the leaves deep-green, oblong, 3 or 4 inches long, the flowers in little-branched often raceme-like bunches. Fruit damson-like.—Bunya Mountains in Queensland, and Clarence River, New South Wales.

B.P.V.—Wood of a light colour, close-grained and prettily marked.

Order CELASTRINEÆ.

CELASTRUS, *Linn.*

75.—*C. BILOCULARIS*, *F. v. M.* in Trans. Phil. Inst. Vict., iii., 31; Flora Austr. i., 399. A small tree, with oval and slightly pointed leaves, sometimes bordered by teeth. The flowers small, in axillary bunches, capsules 2-valved.—Found in several parts of Southern Queensland.

B.V.—Wood of a light-grey colour, close in the grain, hard and tough.

76.—*C. CUNNINGHAMII*, *F. v. M.* in Trans. Phil. Inst. Vic., iii., 30; Flora Austr., i., 399. A small tree, the foliage having a greyish look; the leaves narrow, 1 to 3 inches long, often rigid, the midrib alone prominent. Flowers very small, succeeded by small 2-valved capsules containing 1 or 2 seeds.—Common in open country or on the borders of scrubs in North Australia, Queensland, and New South Wales.

B.P.V.—Wood of a pinkish colour, nicely marked, useful for cutting into veneers for cabinet-work.

DENHAMIA, *Meisn.*

77.—*D. PITTOSPOROIDES*, *F. v. M.* in Trans. Phil. Inst. Vict., iii., 30; Flora Austr., i., 402. A small tree, with hard, narrow, ovoid leaves, the margins of which are more or less toothed, the veins prominent. Flowers minute; fruit globose, hard, splitting at the top into 3 divisions to allow the seeds to escape.—Met with in brigalow scrubs and open country, both North and South Queensland; also in New South Wales.

B.P.V.—Wood of a uniform pale-yellow colour, resembling the English Elder; suitable for engraving, pattern-making, and similar uses.

ELÆODENDRON, *Jacq. f.*

78.—*E. AUSTRALE*, *Vent.*, Jard. Malm., t. 117; Flora Austr., i., 402. A medium-sized tree, the leaves usually opposite, ovate, 2 to 4 inches long, with often blunt teeth. Flowers very small. Fruit a red, oval, dryish drupe, containing a hard usually 1-seeded stone.—Found on the borders of scrubs, North Australia, Queensland, and New South Wales.

B.P.V.—Wood of a pinkish colour, close in grain and very tough, but warps a good deal in drying if cut up before it is seasoned; useful for tool-handles.

78a.—*E. AUSTRALE*, VAR. *ANGUSTIFOLIA*, Flora Austr., i., 403. A similar tree to the last, differing only in the leaves being narrow-oblong.—South Queensland, and Rockhampton in the North.

B.V.—Wood similar to the last.

79.—*E. MELANOCARPUM*, *F. v. M.*, Fragm., iii., 62; Flora Austr., i., 403. Tree of medium size, deep-green foliage; the leaves opposite, oval, with broad blunt teeth; the fruit resembling in shape and colour a large damson.—Common on the Queensland northern coast, at Mount Perry and other inland localities, and in North Australia.

B.P.V.—Wood tough, of a light colour and fine grain.

SIPHONODON, *Griff.*

80.—*S. AUSTRALIS*, *Benth.*, *Flora Austr.*, i., 403. Ivory-wood. A tall tree with straight erect stem, the bark of a light colour. Leaves alternate, pale-green, with few prominent veins, about 2 to 4 inches long, tapering towards the foot-stalk. Flowers very small. Fruit round or pear-shaped, pale-yellow, dry and hard, 1 inch or more in diameter.—Found in the dense scrubs both north and south in Queensland, and also in New South Wales.

B.P.V.—Wood white, very close in grain, firm and easily worked; an excellent wood for the cabinet-maker, and probably would suit for engraving.

Order RHAMNEÆ.

VENTILAGO.

81.—*V. VIMINALIS*, *Hook.* in *Mitch. Trop. Austr.*, 369; *Flora Austr.*, i., 411. A small tree, the branches slender and often whitened, the leaves linear but narrowed towards the base, seldom over $\frac{1}{4}$ -inch broad, 3 to 5 inches long, the midrib prominent, the primary lateral veins few, distant, and almost running parallel with the midrib. Flowers very small in raceme-like panicles. Stamens 5, but no petals. —This small tree is met with in brigalow scrubs and on open inland downs in Queensland; also in North Australia, New South Wales, and South Australia.

B.V.—Wood very hard and heavy, close-grained, and of a dark-brown colour.

ALPHITONIA, *Reissek.*

84. *A. EXCELSA*, *Reissek* in *Endl. Gen.*; *Flora Austr.*, i., 414. Red Ash. Native name, "Mee-a-mee." A small or in the scrubs a tall tree, the bark very rough on old trees, smooth on the younger trees. Leaves usually 3 to 6 inches long, green on the face but white or rusty underneath. Flowers dingy-white. Fruit black when ripe, the outer skins cracking off and showing a mealy substance of a light or dark yellow colour.—Widely spread, often in open country in Northern Australia, Queensland, and New South Wales; also South Cape, New Guinea.

B.P.V.—Wood near the outside somewhat pinkish, the inner wood dark-brown or partly-coloured throughout, close-grained, very tough, warps in drying, but probably a useful wood for the cabinet-maker.

Order AMPELIDÆÆ.

VITIS, *Linn.*

86.—*V. HYPOGLAUCA*, *F. v. M.*, *Pl. Vict.*, i., 94; *Flora Austr.*, i., 450. A tall climber, the leaves composed of usually 5 oval-pointed leaflets from 3 to 5 inches long and often toothed, white on the under surface, and placed finger-like on the top of the stalk. Flowers small, bright-yellow; fruit round, black, of an acid flavour, and about $\frac{1}{4}$ -inch diameter.—Met with on river-banks and scrubs in Queensland, New South Wales, and Victoria.

V.—Wood soft and spongy, of a grey colour.

86a.—*V. STERCULIFOLIA*, *F. v. M.*, Flora Austr., i., 450. A tall climber, the leaflets similarly placed but of a coarser nature and not white on the under side. Fruit ovoid.—Found in Queensland coast scrubs and also in New South Wales.

V.—Wood light-brown, soft and spongy.

Order SAPINDACEÆ.

DIPLOGLOTTIS, *J. D. Hook.*

88.—*D. CUNNINGHAMII*, *J. D. Hook.* in Benth. and Hook. Gen. Pl., 395; Flora Austr., i., 455. Native Tamarind. A large tree with a somewhat brownish smooth bark, the young branches densely clothed with rusty hairs, bluntly angular. Leaves often very large and rough, the leaflets oblong, 1 to 8, often nearly 1 foot long. Flowers small, in clusters along the branches of a straggling panicle. Fruit of 2 or 3 roundish lobes, each containing a round seed which has an amber-coloured inner covering of an agreeable acid flavour.—Scrubs of Queensland and New South Wales.

B.P.V.—Wood light-coloured except near the centre, close-grained and very tough.

CUPANIA, *Linn.*

91.—*C. ANACARDIOIDES*, *A. Rich.*, Sert. Astrol., 33, t. 13; Flora Austr., i., 458. Native name, "Tuckeroo." A moderate-sized tree with umbrageous head, the leaves of usually 8 obtuse rigid leaflets. Flowers in straggling bunches, greenish. Fruit of 3 roundish lobes.—A river-side tree found in North Australia, Queensland, and New South Wales.

B.P.V.—Wood of a light-pinkish colour, close-grained and tough; might serve for making handles for tools.

91a.—*C. ANACARDIOIDES*. Variety with smaller leaves.—Main Range.

B.V.—Wood light-coloured, close-grained, very tough.

93.—*C. PSEUDORHUS*, *A. Rich.*, Sert. Astrol., 34, t. 14; Flora Austr., i., 459. Tree medium size, bark smooth, the branches and foliage rusty. Leaves of from 13 to 21 narrow oval-pointed leaflets, shining on the upper side, more or less hairy underneath. Flowers small. Capsules densely covered with dark-brown hairs.—Generally found bordering rivers, and in coast scrubs in Queensland and New South Wales.

B.P.V.—Wood of a light colour, grain close, very tough; would be excellent for pick-handles.

94.—*C. XYLOCARPA*, *A. Cunn.* A medium-sized tree, the branchlets rusty. Leaflets 3 to 6 or reduced to 2, oblong, 2 or 3 inches long, toothed or entire, with usually small tufts of hairs in the forks of the principal veins on the back. Flower-bunches short; capsule nearly globular, woolly, about $\frac{1}{2}$ -inch in diameter.—Borders of rivers, and in mountain scrubs in Queensland and New South Wales.

B.P.V.—Wood very tough, of light-yellow colour, the grain resembling Lance-wood; would be useful for making tool-handles.

94a.—*C. NERVOSA*, *F. v. M.* in Trans. Vict. Inst., iii, 27; *Flora Austr.*, i, 459. A tree of moderate size, the young branches but slightly downy. Leaves of 3 to 6 leaflets, 3 to 6 inches long, toothed or entire, with sometimes tufts of hairs in the axils of the raised primary veins. Flowers in simple racemes of 1 or 2 inches. Capsules nearly globular, smooth outside, hairy inside.—North and South scrubs in Queensland; also in New South Wales.

B.P.V.—Wood of a light colour, but the centre dark, the grain close.

BATONIA, DC.

95.—*R. PYRIFORMIS*, *Benth.*, *Flora Austr.*, i, 461. A fine umbrageous tree, the leaves of from 3 to 6 oval smooth leaflets, 4 to 6 inches long. Flowers in a straggling panicle, very small; fruit pear-shaped, about $\frac{1}{4}$ -inch long.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood of light colour, firm and tough; suitable for axe-handles.

96.—*R. TENAX*, *Benth.*, *Flora Austr.*, i, 461. Usually a small tree. Leaflets of the leaf various as to number and shape, usually 2 to 6, oblong, pale-green; panicles short; fruit pear-shaped but more or less flattened, more than $\frac{1}{4}$ -inch long.—River scrubs in Queensland; also in New South Wales.

B.P.V.—Wood light in colour, dark towards the centre, very tough and close-grained.

ATALAYA, Blume.

98.—*A. HEMIGLAUCA*, *F. v. M.*, *Flora Austr.*, i, 463. A small tree, producing abundance of white flowers. The leaves light-grey, of few long narrow lobes, which are often curved and from 2 to 8 inches long. Fruit with a wing 1 to $1\frac{1}{2}$ inch long.—North Australia, Queensland, New South Wales, and South Australia. On downs country called Cattle-bush, and frequently felled for fodder during droughty weather.

B.P.V.—Wood yellowish, hard, and of close grain.

NEPHELIUM, Linn.

99a.—*N. TOMENTOSUM*, *F. v. M.* in Trans. Vict. Inst., ii, 64; *Flora Austr.*, i, 466. A medium-sized tree, clothed with a rust-coloured soft down. Leaves of 4 to 8 oval-oblong leaflets more or less toothed. Flower small, in slightly branched panicles. Fruit softly velvety, of 2 or 3 globular lobes.—River scrubs of Southern Queensland and northern scrubs of New South Wales.

B.V.—Wood of a yellow colour, close-grained and hard.

HETERODENDRON, Deesf.

100a.—*H. OLEAFOLIA*, *Deesf.* in *Meur. Mus.*, par. iv., t. 3; *Flora Austr.*, i, 469. A small tree, the young shoots minutely downy. Leaves narrow, 2 to 4 inches long, rigid. Flowers in a panicle, shorter than the leaves. Fruit of from 1 to 4 globular lobes.—Usually met with in dry or brigalow scrubs in many parts of Queensland, New South Wales, Victoria, South Australia, and Western Australia.

B.P.V.—Wood, the outer yellow, the inner dark-brown, hard and close-grained, suitable for engraving or any purpose to which Box is applied.

HARPULLIA, *Roxb.*

104.—*H. PENDULA*, *Planch.* in *Trans. Vict. Inst.*, iii., 26; *Flora Austr.*, i., 471. Tulip-wood. A fine tree, the foliage dense, of a light-green colour. Leaves of 3 to 6 or more, ovate, 3 to 5 inches long; panicle of flowers drooping. Fruit a capsule of usually 2 papery orange-coloured lobes, each containing a glossy black seed; but by far the greater number of fruits are abortive—that is, the capsule is fully developed, but the seed is wanting.—Common in Queensland scrubs north and south, also in New South Wales.

B.P.V.—Wood of a light colour, or in some trees showing a more or less quantity of a beautifully figured and coloured dark wood towards the centre. The outer or light wood is very tough, easily worked, and might suit for engraving purposes; this outer wood is said to be the best in Australia for lithographers' scrapers.

AKANIA, *J. D. Hook.*

106.—*A. HILLII*, *J. D. Hook.* in *Benth. and Hook. Gen. Pl.*, i., 409. Turnip-wood. A small, handsome, erect tree, the leaves 2 or more feet long, composed of long narrow leaflets bordered by sharp teeth, shining on the upper side, the under side showing the netting of the veins, and each mesh enclosing 3 or 4 dots. Panicle long, loose; capsule globose, about 1 inch in diameter, 2 or 3-valved.—Southern Queensland scrubs, and New South Wales.

B.V.—Wood of a light colour, close-grained, and prettily marked; warps very much in drying, but the log used was from a young tree.

BLEPHAROCARYA, *F. v. M.*

106a.—*B. INVOLUCRIGERA*, *F. v. M.*, *Fragm.*, xi., 16. A tree with leaves of about 7 pairs of leaflets. Fruit in a much divided cup.—Mountains about the Endeavour River, Queensland.

B.P.V.—Wood of a light-red colour, of a close grain, soft and easy to work.

DODONÆA, *Linn.*

107.—*D. TRIQUETRA*, *Andr.*, *Bot. Rep.*, t. 230; *Flora Austr.*, i., 474. Hop-bush; native name, "Kinjenga kilamul." A tall shrub with sharply angular branches and long willow-like leaves, the hop-like fruit very abundant.—Found in open country and borders of scrubs in South Queensland, New South Wales, and Victoria.

B.V.—Wood of a light colour except near the centre; close-grained.

108.—*D. VISCOSA*, *Linn.*; *DC.*, *Prod.*, i., 616; *Flora Austr.*, i., 475. Hop-bush. A small tree shedding its bark in long thin strips, the young shoots often very viscid, the branches somewhat angular. Leaves oblong, the capsules with membranous wings resembling the hop.—Found in nearly all parts of Queensland, North Australia, Western Australia, South Australia, Victoria, Tasmania, and New South Wales; also in Tropical America, Africa and Asia, the Pacific Islands, New Zealand, and New Guinea.

The form growing in India is said to be used for engraving, turning, tool-handles, and walking-sticks. Has a white sapwood and a hard dark-brown heartwood which is close-grained.

V.—Wood of a brown colour, close-grained and hard.

Order ANACARDIACEÆ.

RHUS, *Linn.*

109.—*R. RHODANTHEMA*, *F. v. M.* in Journ. Pharm. Soc. Vict. Pl., i., 43; Muell. Cens. Austr. Pl. Deep or Dark Yellow-wood; native name, "Jango-jango." A tall tree, the leaves of from 7 to 9 leaflets 2 or 3 inches long, with often little tufts of hairs along the midrib, the leaflets of the young plants very much larger and often bluntly lobed. Flowers in dense bunches, red; fruit globose, brown and glossy.—Queensland scrubs and creek-sides, north and south; also in New South Wales.

B.P.V.—Wood in demand for cabinet-work; the heartwood of a beautiful glossy dark-yellow or bronzed colour; soft and fine-grained.

BUCHANANIA.

109a.—*B. MANGOIDES*, *F. v. M.* Tree, the smaller branches downy, the leaves large, oblong, green on the upper surface, pale on the under side. Flowers small in a terminal panicle.

B.P.V.—Wood of a pinkish colour, close in grain, tough, and easy to work.

SEMECARPUS, *Linn.*

110.—*S. ANACARDIUM*, *Linn.*; *W. et Arn.*, Prod., 168; Flora Austr., i., 491. Marking-nut tree. A tree with oblong leaves 6 to 9 inches long, pale or nearly white on the under side. Flowers in terminal bunches. The fleshy cup on which the fruit is seated is of a bright red colour, and eatable.—Cairns and northward on the Queensland coast, also in Northern Australia.

In "Gamble's Indian Timbers," page 111, it is stated:—"The wood contains an acrid juice which causes swellings and irritation, and timber-cutters object to felling it. The fruit when ripe is used; the fleshy cup is eaten, but is best either dry or roasted. The pericarp contains an acrid juice, which is universally used in India for marking-ink and in medicine. The ink is improved by the addition of lime-water. The green fruit is pounded and made into birdlime."

B.P.V.—Wood yellow with brown markings, easy to work, strong and tough; might be used in cabinet-work.

EUROSCHINUS, *J. D. Hook.*

111.—*E. FALCATUS*, *J. D. Hook.* in Benth. and Hook. Gen. Pl., i., 422; Flora Austr., i., 490. Maiden's-blush Timber. Mostly of small size, but at times a large tree, with a glossy-green foliage, with a scent, when rubbed in the hand, somewhat like celery. Leaves of 4 to 8 leaflets, curved and tapering to the point, 2 to 4 inches long. Flowers small, in straggling bunches.—Of very frequent occurrence in Queensland, also in New South Wales.

B.P.V.—Wood of a pinkish colour, or quite white, very soft, light, and tough perhaps might serve for making oars.

111a.—*E. FALCATUS*, *VAR. ANGUSTIFOLIUS*, Flora Austr., i., 491. Maiden's Blush. Only differs from the last in the leaves being narrower and, perhaps, the flowers rather larger.

B.P.V.—Wood perhaps of a deeper pink colour, tough, easy to work, close-grained and light.

SPONDIAS, *Linn.*

112.—*S. PLEIOGYNA*, *F. v. M.*, *Fragm.*, iv., 78. Burdekin Plum. A tree of medium size, with spreading head. Leaves of from 2 to 4 pairs of leaflets. Flowers small; fruit somewhat globose, with the top flat, 1 to 1½ inch in diameter, rich purple.—Several localities on the Queensland coast.

B.P.V.—Wood hard, dark-brown with red markings, resembling American Walnut; the grain pretty close, splits quite straight; an excellent wood for the joiner or cabinet-maker, also suitable for turnery.

Order LEGUMINOSÆ.

Suborder PAPILIONACEÆ.

JACKSONIA, *R. Br.*

113.—*J. SCOPARIA*, *R. Br.* Dogwood. A tall or short broom-like shrub with a greyish foliage, and twigs often covered with small yellow flowers. This shrub is sometimes infested by a curious fungoid blight called *Ræstelia polita*, Berk.—A common plant on open country in Queensland, North and South.

V.—Wood yellowish, brown towards the centre.

HOVEA, *R. Br.*

115.—*H. ACUTIFOLIA*, *A. Cunn.* in *G. Don. Gen. Syst.*, ii., 126; *Flora Austr.*, ii., 174. A tall shrub, the shoots and under side of the leaves clothed more or less with rusty down, the leaves narrowed towards each end, 2 or 3 inches long. Flowers very numerous, in clusters of 2 to 3 in the axils of the leaves, of a pretty purple. Pods black when ripe, oblong, about ½-inch long.—On open forest country, Southern Queensland to Wide Bay, and also in New South Wales.

V.—Wood close-grained, yellow, and firm.

115a.—*H. LONGIPES*, *Benth.* in *Hueg. Enum.*, 37; *Flora Austr.*, ii., 174. A small tree with a deeply furrowed uneven stem; leaves oval, deep-green, with oblique parallel veins on the upper surface, the under surface covered with a yellowish down; flowers dull-purple.—Borders of scrubs, Tropical Queensland, and at the Clarence River in New South Wales.

B.P.V.—Wood of a dark-yellow colour, close-grained and very hard.

ERYTHRINA, *Linn.*

117.—*E. VESPERTILIO*, *Benth.* in *Mitch. Trop. Austr.*, 218; *Flora Austr.*, ii., 253. Cork-tree. A deciduous tree of medium size, the branches covered with short dark prickles. Leaves of 3 leaflets, which are lobed so as to give a fanciful resemblance to a bat flying. Flowers pale-pink, the bunches drooping. Pods 4 or 5 inches long, containing red beans.—Found throughout Queensland and Central and Northern Australia.

B.P.V.—Wood of a straw colour, soft and light.

118.—*E. INDICA*, *Lam.* ; *DC.*, *Prod.*, ii., 412 ; *Flora Austr.*, ii., 253. Coral-tree. Often a large tree, deciduous, the branches covered with sharp, short, black prickles. Leaves of 3 leaflets, some of which at times measure as much as 8 inches ; the Southern trees with smaller leaflets. Flowers scarlet, in dense racemes ; pods 6 to 9 inches long, containing few red beans.—Main Range, South Queensland, and commonly found in the coast scrubs of Tropical Queensland ; also in New Guinea, India, and Burmah.

In India the wood, although so light—17 to 26 lbs. per cubic foot—is said to be durable and not to warp or split. It is there used for light boxes, toys, scabbards, and trays.

B.V.—WOOD straw-coloured, very light and soft.

DALBERGIA, *Linn.*

118a.—*D. DENSA*, *Benth.* in *Hook. Lond. Journ.*, ii., 217 ; *Flora Austr.* ii., 271. A small tree with smooth shining bark. Leaves of from 7 to 15, broadly oblong ; very obtuse leaflets $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, hairy on the under side. Flowers in clusters, very small. Pod thin, obtuse, $1\frac{1}{2}$ to 3 inches long and about $\frac{1}{2}$ -inch wide.—Tropical Queensland, New Guinea.

B.V.—WOOD of a light colour, close grain.

LONCHOCARPUS, *H. B. et K.*

119.—*L. BLACKII*, *Benth.*, *Flora Austr.*, ii., 271. A very large climber, the young branches and foliage rusty. Leaves of from 7 to 11 ; leaflets about 1 to $1\frac{1}{2}$ inch, or sometimes longer. Flowers small, dark-purple, in large dense bunches. Seed-pods very thin, 2 to 5 inches long, $\frac{1}{2}$ to $\frac{3}{4}$ inch broad.—A scrub climber of North and South Queensland, and the northern scrubs of New South Wales.

B.P.V.—WOOD very stringy, dark-brown, and porous.

PONGAMIA, *Vent.*

120.—*P. GLABRA*, *Vent.* in *Jard. Malm.*, t. 28 ; *Flora Austr.*, ii., 273. A tree of medium size, the leaves of 5 to 7 leaflets, which are ovate and about 3 inches long. Flowers in racemes about 4 to 5 inches long ; flowers pink, in pairs. Pod $1\frac{1}{2}$ to 2 inches long and about 1 inch broad.—Along the sides of rivers and creeks in Tropical Queensland, Northern Australia, New Guinea, Southern India, and the Archipelago.

In India the wood is thought to be of little value on account of its being so readily eaten by insects. It is, however, used for solid cart-wheels.

B.P.V.—WOOD yellow, close-grained, tough, and prettily marked ; might be useful for chair-making, as it bears bending.

PODOPETALUM, *F. v. M.*

121a.—*P. ORMONDI*, *F. v. M.*, *Melb. Chem. and Drugg.*, June, 1882. Tree with pinnate leaves, the leaflets large, deep-green. Flowers pink.—Endeavour River, Queensland.

B.P.V.—WOOD of a pinkish grey colour, strong and firm, easy to work.

CASTANOSPERMUM, *A. Cunn.*

122.—*C. AUSTRALE*, *A. Cunn.* in Hook. Bot. Misc., i., 241, t. 51, 52; *Flora Austr.*, ii., 275. Bean-tree or Moreton Bay Chestnut. A tall tree with smooth bark and large deep-green leaves, with from 11 to 15 oblong pointed leaflets; the flower-bunches shooting out from the branches below the leaves. Flowers at first canary but changing to a rich scarlet. Pods very large, oblong, containing beans resembling chestnuts.—A common tree of Queensland scrubs; also found at the Clarence River in New South Wales.

B.P.V.—Wood with usually a large quantity of dark-coloured heartwood, prized by cabinet-makers and turners; the outer wood of a yellow colour. The wood shrinks very much in drying. The foliage is thought to be deleterious to stock, should they browse on it in times of drought.

BARKLYA, *F. v. M.*

123.—*B. SYRINGIFOLIA*, *F. v. M.* in Journ. Linn. Soc., iii., 158, and *Fragm.*, i., 109, t. 3; *Flora Austr.*, ii., 275. A medium-sized tree of great beauty, and, like many other Queensland trees, blooming freely as a shrub. Leaves broadly heart-shaped, 2 to 4 inches long and broad, with 5 to 7 prominent nerves. Flowers in dense bunches, deep-yellow. Pod flat, containing 1 or 2 flat seeds.—Found in a few of the scrubs of Southern Queensland, Wide Bay, and Rockhampton; also in New South Wales.

B.P.V.—Wood blackish-grey, close in grain and very tough; suitable for tool-handles.

CASSIA, *Linn.*

124.—*C. BREWSTERI*, *F. v. M.*, 4th Ann. Rep., 17; *Flora Austr.*, ii., 282. A small tree, with leaves of 2 to 4 pairs of oblong leaflets, notched at the end. Flowers brownish. Pods often over 1 foot long, thick and flattened, and 1 inch broad.—Clermont and other parts of Northern Queensland.

B.V.—Wood pale-yellow, close-grained and nicely marked.

124a.—*C. BREWSTERI*, VAR. *TOMENTOSA*, *Flora Austr.*, ii., 282. A tall tree with a deep-green foliage, the leaves a foot long, of many oblong leaflets.—South Queensland.

B.P.V.—Wood pinkish, close-grained and tough.

BAUHINIA, *Linn.*

125.—*B. CARBONII*, *F. v. M.* in Trans. Vict. Inst., iii., 49; *Flora Austr.*, ii., 295. Queensland Ebony. Tree of medium size, the leaves of 2 rather narrow leaflets $\frac{3}{4}$ to over 1 inch long. Flowers reddish, the calyx slightly downy. Petals silky outside, some of them very short. Pod $1\frac{1}{2}$ inch broad and 4 or 5 inches long.—Found in the interior of Queensland and New South Wales.

B.P.V.—Wood light-brown but becoming much darker towards the centre, hard, heavy, close in the grain; suitable for cabinet-work.

126.—*B. HOOKERI*, *F. v. M.* in Trans. Vict. Inst., iii., 51; *Flora Austr.*, ii., 296. Queensland Ebony. Tree of medium size, with a dense head of foliage. Leaves of 2 leaflets, which are very obliquely

ovate, $\frac{1}{4}$ to $1\frac{1}{2}$ inch long, and finely 5 or 7-nerved. Flowers large, showy-white. Pods broad, over 1 inch, and wavy, containing a few flat light-brown seeds.—Met with in the interior and Rockhampton, and other coast localities; the islands of Torres Straits in Queensland; also in several places in North Australia.

B.P.V.—WOOD, the outer of a light-brown, the inner dark-brown, nicely marked, hard, heavy and close-grained; very suitable for cabinet-work.

CYNOMETRA, *Linn.*

127.—*C. RAMIFLORA*, *Linn.*; *DC.*, *Prod.*, ii., 509; *Flora Austr.*, ii., 296. A tree with leaves of usually 2 pairs of obliquely oblong leaflets, 2 or 3 or more inches long. Flowers small. Fruit broad as long, thick, from $\frac{1}{2}$ to more than 1 inch long and rough.—Frequently met with in the coast swamps of Tropical Queensland; also in the tidal forests of South India and Burmah.

In India the wood of this tree is used for house-building, carts, &c., and the chips are said to give in water a purple dye.

B.P.V.—WOOD of a brown colour, rather coarse in grain, hard and heavy, but easy to work, and would be well adapted for house-building work, or might suit the cabinet-maker. The sawdust of the Australian tree yields a purplish dye.

ERYTHROPHLEUM, *Afzelius.*

127a.—*E. LABOUCHERII*, *F. v. M.* in *Flora Austr.*, ii., 297. Dr. Leichhardt's Leguminous Ironbark; native name on the Mitchell, "Ah-pill." A medium-sized tree with a very rough furrowed bark. Leaves twice pinnate, the leaflets almost round and from 1 to 2 inches in diameter. Flowers minute. Pods about 6 inches long and 1 inch broad, containing a few flat nearly round seeds.—In Queensland near the Endeavour, Gilbert, Burdekin, and Johnstone Rivers, Torres Straits, and through to North Australia.

Used by the Mitchell natives for making into spear-heads and wommeras.

B.P.V.—WOOD red, very hard—the hardest in Australia—close-grained, very durable.

ACACIA, *Willd.*

128a.—*A. FASCICULIFERA*, *F. v. M.* in *Flora Austr.*, ii., 361. An erect tree, the branches often drooping, branchlets angular. Leaves 4 to 6 inches long, rather more than $\frac{1}{2}$ -inch broad, thick, the midrib prominent and the margins nerve-like. Flower-heads globular, often clustered in the axils of the leaves. Pods long, flat, about $\frac{1}{2}$ -inch broad.—Rockhampton, and thence inland in Queensland; also in some parts of New South Wales.

B.P.V.—WOOD of a red colour, very hard, and close in the grain; useful for building purposes.

128b.—*A. SENTIS*, *F. v. M.* in *Journ. Linn. Soc.*, iii., 128, and *Pl. Vic.*, ii., 18; *Flora Austr.*, ii., 360. A small tree, branches hairy when young. Leaves oblong-narrow, 1-nerved, about 1 inch long and seldom $\frac{1}{4}$ -inch wide, often much less, with usually sharp fine spines at their base. Flowers in small globular heads. Pods flat, $\frac{1}{4}$ to $\frac{1}{2}$ inch broad.—An interior shrub or small tree, within all the colonies; also in Tasmania.

B.P.V.—WOOD close-grained, hard, and nicely marked.

128c.—*A. FALCATA*, Willd., Spec. Pl., iv., 1053; Flora Austr., ii., 361. A small tree with angular branchlets. Leaves much curved and tapering towards each end; the midrib prominent, much nearer one side than the other, and the lateral veins distant from each other. Flowers in small globular heads, arranged in a loose bunch, pale-coloured. Pod slightly flattened, narrow, purple, about 5 inches long. —Generally found on hill-sides, Queensland, north and south; also in New South Wales.

B.P.V.—WOOD near the outside yellow, the rest light-brown, heavy and tough; might be useful for cabinet-work.

129.—*A. MACRADENIA*, Benth. in Mitch. Trop. Austr., 360; Flora Austr., ii., 362. A small tree with twisted, angular, drooping branches. Leaves curved, narrowed towards each end, the gland near the base long, 1-nerved, and 6 to nearly 12 inches long. Flowers in small globular heads. Pods narrow, 3 or 4 inches long, dark-coloured; seeds oval.—Inland in Queensland; common in the Leichhardt district, also in New South Wales.

B.V.—WOOD close-grained and tough.

130a.—*A. PENNINERVIS*, VAR. *FALCIFORMIS*. Differing from the normal form in that the leaves are much broader, and at the marginal gland it often forms a short prominent point. Pod often much broader also.—An inland tree or large shrub.

V.—WOOD, the sample received unfit to work up.

130b.—*A. NERIIFOLIA*, A. Cunn.; Benth. in Hook. Lond. Journ., i., 357; Flora Austr., ii., 363. A small tree, the branchlets slightly angular and mealy when young. Leaves grey, linear, more or less curved, the small callous point often recurved, about 5 inches long and $\frac{1}{2}$ -inch broad, 1-nerved, and 1, 2, or 3 marginal glands, or wanting. Flowers in small globular heads. Pod flat, straight, a few inches long and about $\frac{1}{2}$ -inch broad.—Open country inland, Stanthorpe in Queensland, also inland in New South Wales and South Australia.

The bark contains 13·91 per cent. of tannin.

B.P.V.—WOOD dark-coloured, prettily marked, close-grained, and tough.

131.—*A. SALICINA*, Lindl. in Mitch. Three Exped., ii., 20; Flora Austr., ii., 367. A small tree with a light-grey foliage, the branches often pendulous. Leaves oblong, narrowed towards the base, 4 or 5 inches long and $\frac{1}{2}$ -inch broad, the midrib at times not very prominent. Flowers pale, in globular heads. Pods straight, thick, 1 to 3 inches long; seeds round, funicle scarlet.—Frequent in inland open country in Queensland, North Australia, Western Australia, New South Wales, South Australia, and Victoria.

B.V.—WOOD dark-brown, tough, easy to work; would be a useful cabinet wood.

132.—*A. LINIFOLIA*, Willd., Sp. Pl., iv., 1051; Flora Austr., ii., 371. A tall straggling shrub, grey or green, the branchlets angular. Leaves narrow-linear, 1 to 2 inches long and under $\frac{1}{2}$ -inch broad, with the midrib often hairy, and a small gland above the base. Racemes of

globular flower-heads very numerous. Pod linear, flat, about 4 inches long and $\frac{1}{4}$ -inch broad.—Found on creek-sides in Queensland and New South Wales.

B.V.—Wood of light colour, red in the centre, close-grained and tough.

133.—*A. PODALYFOLIA*, *A. Cunn.* in *G. Don. Gen. Syst.*, ii., 405; *Flora Austr.*, ii., 374. Silver Wattle. A tall shrub, more or less mealy, grey, or silvery; the leaves obliquely oblong, about 1 or $1\frac{1}{2}$ inch long, 1-nerved, and with 1 or 2 marginal glands. Flower-racemes numerous, bearing small globular heads of flowers. Pods flat, over $\frac{1}{2}$ -inch broad and about 3 inches long.—On or near ranges, Southern Queensland; also in New South Wales.

The bark contains 12·40 per cent. of tannin.

B.P.V.—Wood of a pinkish colour, nicely marked.

133a.—*A. HOMALOPHYLLA*, *A. Cunn.*; *Benth.* in *Hook. Lond. Journ.*, 1365; *Flora Austr.*, ii., 383. *Gidia*; on the Cloncurry called “Wong-arrah.” A small tree, the foliage hoary and the branchlets slightly angular. Leaves narrow-oblong, linear, 1 to 3 inches long and about $\frac{1}{4}$ -inch broad, thick, with parallel nerves. Flowers in globular heads; pods linear, grey like the leaves, slightly curved, and about $\frac{1}{2}$ -inch broad.—Western Inland Queensland; and in New South Wales, South Australia, and Victoria.

B.V.—Wood dark, close-grained, hard, heavy, and prettily marked.

134.—*A. PENDULA*, *A. Cunn.* in *G. Don. Gen. Syst.*, ii., 404; *Flora Austr.*, ii., 383. Weeping Myall. A small tree with an ash-grey foliage, the branchlets slightly angular and drooping. Leaves linear, 2 or 3 inches long, with parallel nerves. Flowers in globular heads. Pods flat, nearly $\frac{1}{2}$ -inch broad, the suture bordered by a very narrow wing.—An inland tree in South Queensland, also in New South Wales.

B.P.V.—Wood fragrant, dark, close-grained, hard; much prized by the cabinet-makers and turners.

135.—*A. STENOPHYLLA*, *A. Cunn.*; *Benth.* in *Hook. Journ.*, i., 366; *Flora Austr.*, ii., 385. Dalby Myall. A small tree with a dark hard bark, the branches angular. Leaves long, linear, often very narrow, nearly 1 foot long and under $\frac{1}{4}$ -inch broad, with many fine parallel nerves, the flowers in short racemes, bearing few globular heads of flowers. Pods long, necklace-like; seeds ovate.—On downs and borders of creeks inland in Queensland, North Australia, New South Wales, Victoria, and South Australia.

B.P.V.—Wood useful for cabinet-work; dark, prettily marked, close-grained and very hard.

137.—*A. HARPOPHYLLA*, *F. v. M.* in *Benth. Flora Austr.*, ii., 389. Brigalow. A tall tree with an upright stem, the bark rough, the branchlets angular. Leaves much curved, tapering towards each end, 6 to 8 inches long, of a deep-green or sometimes quite a grey colour; veins parallel. Flowers in small globular heads.—Queensland, south and north, often forming scrubs called in Queensland “brigalow scrubs.”

B.P.V.—Wood brown, close-grained, elastic, scented; a good cabinet wood.

137a.—*A. EXCELSA*, *Benth.* in Mitch. Trop. Austr., 225; Flora Austr., ii., 390. Ironwood Wattle. Often a tall tree with a rugged bark, the branchlets slightly angular. Leaves oblong, slightly curved, 2 to 3 inches long and $\frac{1}{4}$ -inch or rather more broad, rather thick, with 5 to 7 parallel nerves; the globular heads of flowers on short stalks. Pods straight, flat, about $\frac{1}{4}$ -inch broad.—Queensland, on downs country inland.

B.P.V.—WOOD very hard, dark, close-grained; useful where strength and durability are required.

138a.—*A. FLAVESCENS*, *A. Cunn.*; *Benth.* in Hook. Lond. Journ., i., 381; Flora Austr., ii., 391. A small tree, the young shoots clothed with a hoary or yellowish mealy down, branchlets angular. Leaves very broad in the middle, tapering each way, 4 to 8 inches long and from 1 to 3 inches broad, with usually 3 prominent nerves. Flowers in globular heads. Pods curved, flat, 3 to 5 inches long and nearly 1 inch broad.—Common on coast lands in Tropical Queensland.

The bark contains 10·20 per cent. of tannin.

B.V.—WOOD of a brown colour, prettily marked, close-grained and hard.

139.—*A. LONGIFOLIA*, *Willd.*, Spec. Pl., iv., 1052; Flora Austr., ii., 397. A small tree, the branches angular. Leaves oblong, obtuse, 5 or 6 inches long, with parallel nerves. Flowers in spikes; pods long, slender.—Creek-sides in South Queensland, also in New South Wales, Victoria, South Australia, and Tasmania.

The bark contains 12·67 per cent. of tannin.

B.P.V.—WOOD towards the outside pale yellow, the inner brown streaked with black; tough and easily worked; a useful cabinet wood.

139a.—*A. GLAUCESCENS*, *Willd.*, Spec. Pl., iv., 1052; Flora Austr., ii., 406. One of the so-called Rosewoods. A tall erect tree, with a thin bark roughened by small pieces forming little curls all over the stem; branchlets more or less angular. Leaves oblong, narrowed towards both ends, 4 to 6 inches long, $\frac{1}{4}$ -inch or more broad, 3 to 5 of the nerves more prominent than the rest. Spikes of flowers often clustered, 1 to 2 inches long.—North and south in Queensland; also in New South Wales.

B.P.V.—WOOD with a very narrow quantity of sapwood of a light-yellow colour; all the rest dark, resembling English Walnut and Rosewood; a valuable wood for veneers; more or less fragrant; useful in turnery and cabinet-work.

139b.—*A. GLAUCESCENS*, *VAR.* Ringy Rosewood. This tree seems to differ only in the wood having transverse wavy lines, but no flowers or pods have been sent in with the logs of wood, only the foliage.—Queensland (inland).

B.P.V.—Only differing from the last in the transverse wavy lines observable in the wood, and which give to a turned stick a ringed-like appearance.

139c.—*A. DORATOXYLON*, *A. Cunn.* in Field N.S.W., 345; Flora Austr., ii., 403. Mulga. A small tree of a grey hue, the branchlets angular. Leaves linear, slightly curved, with an oblique or recurved point, 4 to 8 inches long and about $\frac{1}{4}$ -inch broad, rather thick, with many parallel nerves, the middle one more prominent

than the others. Flowers clustered or solitary.—Inland, on downs country in Queensland, New South Wales, South Australia, and Victoria.

B.P.V.—Wood dark-brown, with a small yellow sapwood, close-grained, very hard, and prettily marked.

139d.—*A. TORULOSA*, *Benth.* in Journ. Linn. Soc., iii., 139; Flora Austr., ii., 405. A small tree with angular branchlets. Leaves linear, curved, with an oblique glandular point, 4 to 8 inches long, often over $\frac{1}{2}$ -inch broad, with 3 to 5 more prominent than the rest. Spikes of flowers solitary or 2 or 3 together. Pods long, necklace-like; seeds oblong.—Endeavour River, Queensland, and North Australia.

B.P.V.—Wood dark-brown, tough and strong.

140.—*A. CUNNINGHAMII*, *Hook.*, K. Pl., t. 165; Flora Austr., ii., 407. Black Wattle; native name, "Kowarkul." Tree of medium size, the branchlets acutely 3-angled, often reddish. Leaves much curved, tapering each way, 4 to over 6 inches long and 1 to $1\frac{1}{2}$ inch broad, with from 3 to 5 prominent longitudinal nerves, confluent with the lower margin near the base. Flowers 3 or more inches long. Pod linear, much twisted and narrow.—Wide-spread in Queensland, but forming the largest growth near the coast; also in New South Wales.

The bark contains 9·13 per cent. of tannin.

B.P.V.—Wood of a dark colour, close-grained, hard, heavy, and prettily marked.

140b.—*A. LEPTOCARPA*, *A. Cunn.*; *Benth.* in Hook. Lond. Journ., i., 376; Flora Austr., ii., 407. A small tree, the leaves curved, narrowed towards each end, 4 to 6 inches long, about $\frac{1}{2}$ -inch broad, 3 of the nerves more prominent than the others, the finer ones not very close. Flower-spikes about 2 inches long; pod linear, nearly straight, very narrow.—Queensland tropical coast.

B.P.V.—Wood dark-brown, close-grained, hard and prettily marked, useful for cabinet and turnery work.

140a.—*A. POLYSTACHYA*, *A. Cunn.*; *Benth.* in Hook. Lond. Journ., i., 376; Flora Austr., ii., 407. Tree medium-sized, branchlets angular at first. Leaves curved, narrowed towards each end, 6 to 10 inches long, 1 to $1\frac{1}{2}$ inch broad, with 3 to 5 very prominent nerves, the others fine and numerous. Flower-spikes 1 or 2 inches long, solitary or 2 or 3 together. Pod several inches long and $\frac{1}{2}$ -inch broad.—Tropical Queensland coast and North Australia.

The bark contains 7·59 per cent. of tannin.

B.P.V.—Wood dark-coloured and close grained, with pretty markings.

141.—*A. AULACOCARPA*, *A. Cunn.*; *Benth.* in Hook. Lond. Journ., i., 378; Flora Austr., ii., 410. Hickory Wattle. Tree of medium size, the foliage coated with a thin grey wax, giving it a hoary appearance. Leaves narrow to each end, 4 to 6 inches long, $\frac{1}{2}$ to 1 inch broad, 3 to 5 of the parallel veins more prominent than the others and confluent at the lower margin near the base. Flower-spikes

2 or 3 inches long, the flowers of a pale colour. Pods oblong, 3 or 4 inches long and $\frac{1}{4}$ -inch broad, with oblique transverse grooves.—Common in forest country, Queensland.

B.P.V.—Wood hard, heavy, tough, and dark-red coloured; useful for cabinet-work.

141a.—*A. CALYCVLATA*, *A. Cunn.*; *Benth.* in Hook. Journ., i., 379; Flora Austr., ii., 410. A small tree, the branchlets flat when young. Leaves 2 to 3 inches long and $\frac{1}{4}$ -inch broad, rather thick, with closely packed parallel veins, a few stronger. Spikes clustered, $\frac{1}{2}$ to 1 inch long; flowers very small. Pod curved, oblong, flat, thick, hard, and obliquely veined.—Tropical coast, Queensland.

B.P.V.—Wood dark-brown, hard, heavy, and close-grained; suitable for turnery and cabinet work.

141b.—*A. CRASSICARPA*, *A. Cunn.*; *Benth.* in Hook. Lond. Journ., i., 379; Flora Austr., ii., 410. Tree medium size, grey or hoary. Leaves curved, oblong, narrowed at both ends, 5 to 8 inches long, 1 to 2 inches broad, very oblique, with some of the principal nerves confluent with the lower margin near the base. Flower-spikes about 1 inch long. Pods oblong, flat, thick, hard, obliquely veined, nearly 1 inch broad and 2 or 3 inches long.—Coast, Tropical Queensland and North Australia.

B.P.V.—Wood prettily marked, hard, and dark-coloured.

142.—*A. POLYBOTRYA*, var. *FOLIOLOSA*, *Benth.* in Flora Austr., ii., 414. A tall shrub more or less hairy. Leaves twice pinnate; pinnae 4 to 6 pairs, 2 to 3 inches long; leaflets 15 to 25, from $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Flowers showy, in rather small globular heads composed in a terminal panicle.—Ranges of South Queensland.

B.V.—Wood pinkish, close in grain, hard and beautifully marked; would be a useful wood for the cabinet-maker.

142a.—*A. DECURRENS*, *Willd.*, Spec. Pl., iv., 1072; Flora Austr., ii., 414. Green Wattle. A small tree with a grey feathery foliage, the branchlets angular. Leaves twice pinnate; pinnae 8 to 15 pairs, the leaflets very small and numerous. Flowers in terminal or axillary panicles composed of small globular heads of yellow flowers. Pods 3 or more inches long and about $\frac{1}{4}$ -inch broad; seeds ovate.—Open forest country in Southern Queensland; also in New South Wales, South Australia, Victoria, and Tasmania.

The bark contains 15·08 per cent. of tannin.

B.B.V.—Wood tough, firm, and easy to work; the sapwood white, heartwood of a pinkish colour.

143.—*A. DECURRENS*, var. *LEICHHARDTI*, *Benth.* in Flora Austr., ii., 415. A tall shrub clothed with spreading hairs, the leaflets very small.—Maroochie, Queensland.

B.V.—Wood of a light colour near the outside, but pinkish towards the centre; the grain close and prettily marked.

145.—*A. BIDWILLI*, *Benth.* in Linnæa, xxvi., 629; Flora Austr., ii., 420. Native name at Cloncurry, "Yadthor." A small tree, the bark corky, light-green foliage, and the branches often prickly and

drooping. Leaves twice pinnate; pinnæ 15 to 20 pairs, the leaflets 15 to 25 pairs, oblong, about a line long. The peduncle with a ring-like leaf about the middle, and bearing a globose head of pale-yellow flowers at the end. Pod straight, 3 to 6 inches long and $\frac{1}{4}$ -inch broad; seeds large, ovate.—Often on open forest land in Tropical Queensland; also in North Australia.

B.V.—Wood light-yellow near the outside, the inner wood dark, close-grained, light and easy to work.

145a.—A. BIDWILLI, VAR. MAJOR, *Benth.* in *Flora Austr.*, ii., 420. A medium-sized tree resembling the last, only so much larger.—Gulf country.

B.P.V.—Wood of a light colour; easy to work.

ALBIZZIA, *Durazz.*

145b.—A. TOONA, *Bail.* in Supplement to Syn. Ql. Fl. *Acacia* Cedar or Mackay Cedar. A large tree with dense head of dark foliage, the young shoots rusty. Leaves feathery, of very numerous small leaflets, more or less downy.

B.P.V.—Wood of a light colour for several inches in from the bark, the rest resembling Red Cedar; a valuable wood for many purposes.

146.—A. BASALTICA, *Benth.* in *Flora Austr.*, ii., 422. Dead Finish. A small tree, the branches rusty with glandular hairs. Pinnæ 1 or two pairs; leaflets 5 to 10 pairs, oblong, about $\frac{1}{4}$ -inch long. Peduncle bearing a dense globular head of flowers. Pod about 3 or 4 inches long and nearly $\frac{1}{4}$ -inch broad.—An inland tree in Queensland, forming very dense thickets.

B.V.—Wood towards the bark bright-yellow, the heartwood dark-red, close-grained, hard, and very beautiful; excellent for cabinet-work.

147.—A. THOZETIANA, *F v. M.* in *Flora Austr.*, ii., 422. A large tree. Leaves small, of 1 pair of pinnæ and 2 to 4 pairs of leaflets, which are from $\frac{1}{4}$ to 1 inch long. Peduncles about 1 inch long, with a globular head of flowers. Pod 4 to 8 inches long and over $\frac{1}{4}$ -inch broad. Seeds flat, orbicular, with a wing-like border.—Coast scrubs of Tropical Queensland.

B.V.—Wood of a red colour, hard, heavy, and durable, very tough and close in the grain.

148.—A. CANESCENS, *Benth.*, *Flora Austr.*, ii., 423. A small tree with a light-coloured corky bark. Leaves twice pinnate, wide-spreading, with 2 pairs of pinnæ, seldom more; leaflets 5 to 8 pairs, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long. Flower-heads in a terminal panicle. Pod 8 to 10 inches long and $1\frac{1}{2}$ to $2\frac{1}{2}$ broad; seeds arranged along the centre of these thin flat pods.—In open forests, Tropical Queensland.

B.P.V.—Wood brown, resembling Walnut, nicely marked; very suitable for cabinet-work. Considered by some to resemble Walnut.

148a.—A. PROCERA, *Benth.* in *Hook. Lond. Journ.*, iii., 88; *Hook.*, Fl. Ind., ii., 299; *Flora Austr.*, ii., 422. A large deciduous tree, the bark brownish or greyish, rough with irregular horizontal cracks; the leaves large, with 4 to 6 or even more distant pairs of spreading pinnæ, with 6 to 10 pairs of oblong leaflets 1 to $1\frac{1}{2}$ inch long and

$\frac{1}{2}$ -inch or more broad; the pods thin and broad.—Thursday and other islands of Torres Straits; also in India.

In India the dark heartwood is considered durable, and is used for sugar-cane crushers, rice-pounders, wheels, agricultural implements, bridges, and house-posts. It is found to split well, and so used for fencing by tea-planters. It is occasionally used for tea-boxes, and is excellent for charcoal. The tree is of rapid growth, making in thirty years a girth of from 4 to 6 feet.

B.P.V.—WOOD of a dark colour, resembling Walnut; a useful cabinet wood.

PITHECOLOBIUM, *Mart.*

149.—*P. PRUINOSUM*, *Benth.* in *Lond. Journ.*, iii., 211; *Flora Austr.*, ii., 423. Tree of medium size, the young branches downy. Leaves spreading, irregular as to size, twice pinnate; pinnæ 1 or 2 pairs; leaflets broadly oblong, very irregular as to number and size. Flowers yellowish in globular umbels. Pod several inches long and about $\frac{1}{2}$ -inch broad; seeds black, glossy, ovate.—Queensland coast scrubs; also in New South Wales.

B.V.—WOOD of a light-yellow colour, becoming brown near the centre; very disagreeably scented when newly out.

149a.—*P. TOZEI*, *F. v. M.* in *Trimen's Journ. Bot.*, 10, and in *Census of Austr. Pl.* A medium-sized tree. Leaves and flowers like the last, only larger, the leaves of a firmer consistency.—Coast scrubs in Queensland; also in New South Wales.

B.V.—WOOD light-yellow, red and nicely marked towards the centre, close in the grain, light and easy to work; possessing a most disagreeable scent when newly out.

ARCHIDENDRON, *F. v. M.*

150.—*A. VAILLANTII*, *F. v. M.*, *Fragm.*, v., 60; ix., 178. A moderate-sized tree. Leaves very large of 1 pair of pinnæ; leaflets 3 or 4 pairs, ovate, 3 to 7 inches long. Flowers purplish in heads.—Johnstone River, Queensland.

B.V.—WOOD of a red colour, close-grained, strong and durable.

Order ROSACEÆ.

PARINARIUM, *Juss.*

151.—*P. NONDA*, *F. v. M.* in *Flora Austr.*, ii., 426. A small tree, more or less downy, the leaves oval, 1 to 3 inches long, 1 to $1\frac{1}{2}$ inch broad, whitish on the under side, with prominent veins. The flowers small, in a terminal panicle. Fruit oval.—Tropical Queensland and N. Australia.

B.V.—WOOD light-yellow colour, cross-grained, very strong.

Order SAXIFRAGÆÆ.

ARGOPHYLLUM, *Forst.*

151a.—*A. LEJOURDANII*, *F. v. M.*, *Fragm.*, iv., 33; *Flora Austr.*, ii., 437. A tall shrub, the branches silvery-white. Leaves ovate, about 4 inches long, silvery on the back; flowers and fruit small.—Not very common, but met with at distant localities, as Logan River, Mount Perry, and Mount Elliott.

V.—WOOD yellow, close-grained and hard.

CUTTISIA, *F. v. M.*

152a.—*C. VIBURNEA*, *F. v. M.*, *Fragm.*, v., 47; *Bail.*, *Syn.*, 150. A tall straggling shrub, the leaves from 4 to 8 inches long, with distant teeth. Flowers in bunches at the ends of the branches. Capsule globular, small.—Mountain creeks, Southern Queensland.

B.P.V.—Wood white, close in the grain, and very tough.

DAVIDSONIA, *F. v. M.*

154.—*D. PRURIENS*, *F. v. M.*, *Fragm.*, vi., 4; *Bail.*, *Syn.*, 152. A slender, erect, small tree, more or less hairy. Leaves large, pinnate, the leaflets very irregular as to size, toothed. Flowers in a long drooping panicle. Fruit oval, covered with stiff hairs, juice purple when ripe, of a sharp acid.—Tropical Queensland scrubs.

B.P.V.—Wood dark-coloured, close-grained, hard and tough.

WEINMANNIA, *Linn.*

155.—*W. LACHNOCARPA*, *F. v. M.*, *Fragm.*, viii., 7; *Bail.*, *Syn.*, 153. Marara; often also called Scrub Redwood. A large tree with a rough scaly bark. The leaves of 3 leaflets 2 to 6 inches long, and toothed. Flowers small, succeeded by densely woolly capsules of reddish-brown.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood light-pink, close in the grain; might be used for making planes, mallets, and chisel-handles.

Order RHIZOPHOREÆ.

RHIZOPHORA, *Linn.*

156.—*R. MUCRONATA*, *Lam.*; *DC.*, *Prod.*, iii., 82; *Flora Austr.*, ii., 493. Mangrove. A small tree with thick branches and oval leathery leaves 3 or 4 inches long, the projecting point at the end generally present, but sometimes worn off. Flowers stiff; segments of calyx 4; petals 4. Fruit germinating before falling off the tree.—A maritime tree, found on the coast from New South Wales to Cape York, and in New Guinea and Tropical Africa and Asia.

The bark contains 18.20 per cent. of tannin. In India the wood is considered very durable, extremely hard, and splits and warps but little in seasoning. The bark is also used in tanning.

B.P.V.—Wood of a light colour, with a reddish centre or heartwood; the grain close, tough.

BRUGUIERA, *Lam.*

158.—*B. RHEEDI*, *Blume*, *Enum. Pl. Jav.*, 92; *Flora Austr.*, ii., 494. Red Mangrove; native name, "Kowinka." A small tree with hard black bark and deep-green glossy leaves, oblong, 3 to 6 inches long, of a leathery consistence. Flowers red, solitary in the axils of the leaves; segments of calyx about 12, the petals shorter and hairy. Fruit germinating before falling from the tree.—All round the Queensland coast, and also North Australia, New Guinea, and Tropical Asia.

The bark contains 19.48 per cent. of tannin.

B.P.V.—Wood of a light colour, close-grained and tough, and nicely marked; useful for many purposes, especially as axe and pick handles.

CARALLIA, *Roxb.*

159a.—*C. INTEGERRIMA*, *DC.*, *Prod.*, iii., 33; *Flora Austr.*, ii., 495. A medium-sized tree with oblong leaves 3 to 5 inches long, the flowers usually borne on the branches below the leaves, each bunch bearing 3 to 5 flowers. Fruit succulent, round, about $\frac{1}{2}$ -inch in diameter.—Queensland tropical coast, North Australia, India, Burmah, and South China.

In India the wood is used for furniture and cabinet-making, and in Burmah for planking, furniture, and rice-pounders.

B.P.V.—Wood light-coloured but darkening towards the centre, close in the grain and easy to work.

Order COMBRETACEÆ.

TERMINALIA, *Linn.*

161.—*T. OBLONGATA*, *F. v. M.*, *Fragm.*, ii., 152; *Flora Austr.*, ii., 499. A tree of moderate size, the shoots hoary. Leaves oblong, clustered on the short branchlets, 2 or 3 inches long. Flowers in slender spikes 2 or 3 inches long. Fruit 2-winged, a little over $\frac{1}{2}$ -inch long.—In the Tropical Queensland scrubs.

B.P.V.—Wood light-coloured, nicely marked; suitable for cabinet-work.

161a.—*T. BURSARINA*, *F. v. M.*, *Fragm.*, ii., 149; *Flora Austr.*, ii., 499. A small creek-side tree, the branches and leaves silky. Leaves from 1 to $1\frac{1}{2}$ inch long, oval, showing the netted veins. Flower small, in spike of 2 or 3 inches in length. Fruit from 3 to 5 lines long, pointed, somewhat ovate and 3-angled, the one face broader than the others and furnished about the centre with a blunt prominent spur.—Gulf country, Queensland; also in North Australia.

B.P.V.—Wood of a dark colour, close-grained, hard, and prettily marked; useful for cabinet-work.

162.—*T. MELANOCARPA*, *F. v. M.*, *Fragm.*, iii., 92; *Flora Austr.*, ii., 500. A tall tree, the young buds silky. Leaves very obtuse, 3 or more inches long, the veins prominent on the under side. Flowers in spikes about as long as the leaves, the tube silky-hairy, but few hairs on the other parts of the flowers. Drupe ovoid, compressed.—Queensland tropical coast.

B.V.—Wood of a light-yellow colour, close-grained, hard and tough.

163.—*T. SERICOCARPA*, *F. v. M.*, *Fragm.*, ix., 159; *Syn.* Ql. Fl., 160. A tall tree, the branchlets silky. Leaves narrow-ovate, but tapering much towards the base, both sides glossy, the midrib and primary veins fine but prominent, 2 to 4 inches long. Flower-spikes longer than the leaves, erect, very delicate. Fruit oblong, silky, flattish, with acute margins, about $\frac{1}{2}$ -inch long.—Tropical coast scrubs, Queensland.

B.P.V.—Wood a light-yellow with a darker-coloured heartwood, hard and tough; would suit well for chair-making.

163a.—*T. MUELLERI*, *Benth.*, *Flora Austr.*, ii., 500. A tall tree, the young buds silky; leaves obovate, 3 or 4 inches long. Spikes

of loose flowers several inches long. Fruit ovoid, bluish, about $\frac{1}{2}$ -inch long, no wing.—Scrubs of the Tropical Queensland coast.

B.V.—Wood yellow, but pinkish towards the centre, tough and light, suitable for axe-handles.

163b.—*T. PLATYPHYLLA*, *F. v. M.*, *Fragm.*, ii., 150; *Flora Austr.*, ii., 502. Native name on the Flinders, "Durin." Tree of medium size, the young growth hoary. Leaves broadly ovate, very obtuse, 4 to 6 inches long, generally hoary on both sides. Flower-spikes shorter than the leaves. Fruit hoary, ovoid or oblong, often with a more or less elongated beak.—Gulf country and islands of Torres Straits, Queensland.

B.P.V.—Wood dark-coloured, close in the grain, tough, hard, and prettily marked.

163c.—*T. PORPHYROCARPA*, *F. v. M.*, *Flora Austr.*, ii., 501. A tall tree, the leaves and young shoots hoary. Leaves obovate, 2 or 3 inches long, clustered at the ends of the rather thick branches. Flower-spikes rather dense. Fruit ovoid.—Scrubs of Tropical Queensland.

B.P.V.—Wood of a yellow colour, nicely marked, close-grained, hard, and tough; useful for house-building and cabinet-work.

LUMNITZERA, *Willd.*

164.—*L. RACEMOSA*, *Willd.*; *DC.*, *Prod.*, iii., 22; *Flora Austr.*, ii., 504. A small tree, the leaves 1 to 2 inches long, obtuse and tapering much towards the base, rather fleshy. Flowers white, in short axillary racemes.—Found amongst the mangroves on the coast in a few places in Southern Queensland, but common in the tropics in similar situations, in India, East Africa, the Pacific Islands, and New Guinea.

B.P.V.—Wood of a pinkish-grey colour, hard, and close in the grain.

MACROPTERANTHES, *F. v. M.*

164a.—*M. FITZALANI*, *F. v. M.*, *Fragm.*, viii., 160. A moderate-sized tree, the tips of the shoots silky, and a few hairs showing on the leaves. Leaves obovate, 1 to $1\frac{1}{2}$ inch long, the principal veins rather distant, not very prominent. Peduncles about $\frac{1}{2}$ -inch long, bearing 2 small flowers.—Gladstone and Bowen, Queensland.

B.P.V.—Wood near to the bark yellow, the centre a dark-grey, very close-grained and hard; useful in turnery and cabinet-work.

GYROCARPUS, *Jacq.*

165.—*G. JACQUINI*, *Roxb.*, *Pl. Corom.*, i., 2, t. i.; *Flora Austr.*, ii., 505. A small deciduous tree, the alternate lobed leaves often over 8 inches in diameter. Flowers in small globular heads in a spreading panicle. Fruit ovoid, with 2 wings, often 4 inches or more long and $\frac{1}{2}$ -inch broad.—Scrubs near Rockhampton, and tropical coast scrubs, Queensland, North Australia, New Guinea, and the tropics of both the New and Old World.

In India the wood is preferred to all others for catamarans. The seeds are also made into rosaries and necklaces.

B.P.V.—Wood very light and soft.

Order MYRTACEÆ.

LEPTOSPERMUM, *Forst.*

166.—*L. FLAVESCENS*, *Sm.* in *Trans. Linn. Soc.*, iii., 262; *Flora Austr.*, iii., 104. A tall shrub, with or without silky hairs on the young growth. Leaves 1 or 3-nerved, about $\frac{1}{2}$ -inch long. Flowers solitary, terminating short branchlets. Capsule prominent above the calyx-tube.—Abundant in swampy land about Brisbane, and not scarce in most Queensland swamps, north and south; also in New South Wales, Victoria, and Tasmania, in the Indian Archipelago and Malacca.

V.—Wood light-coloured, close-grained and tough.

166b.—*L. MYRTIFOLIUM*, *Sieb.* in *DC. Prod.*, iii., 238; *Flora Austr.*, iii., 108. A tall shrub with slender branches, the leaves seldom over $\frac{1}{2}$ -inch long, oblong, 1 or 3-nerved. Flowers small, solitary in the axils of the leaves; calyx-tube silky, capsule flat-topped.—Coast lands in Queensland, New South Wales, and Tasmania.

B.V.—Wood close-grained, tough, and dark in colour.

166c.—*L. ABNORME*, *F. v. M.*, *Flora Austr.*, iii., 109. A tall shrub, or at times quite a small tree, with a deciduous bark; the leaves 1 to 2 inches long, with 1 prominent nerve and 1 or 2 faint lateral ones. Flowers numerous, small. Capsule shorter than the tube.—*Stanthorpe*, and in coast swamps up to Cape York in Queensland; also in North Australia, and the Hastings and Severn Rivers in New South Wales.

B.P.V.—Wood of a dark colour, hard, heavy, and close-grained.

CALLISTEMON, *R. Br.*

167.—*C. LANCEOLATUS*, *DC.*, *Prod.*, iii., 223; *Flora Austr.*, iii., 120. Red Bottle-brush or Water-gum; native name, "*Marum*." A small tree with a rather rough brown bark and narrow feather-veined leaves 1 to 3 inches long, and attaining in some a $\frac{1}{2}$ -inch breadth, usually silky. The flowers in nodding spikes of a pink or deep-red colour.—Common throughout Queensland in beds of rivers and creeks, also in New South Wales and Eastern Gippsland, Victoria.

B.P.V.—Wood of a red colour, close in grain, hard and tough; used for ship-building and wheelwrights' work.

168.—*C. SALIGNUS*, *DC.*, *Prod.*, iii., 223; *Flora Austr.*, iii., 120. A small tree with a papery bark and feather-veined leaves 2 to 4 inches long, $\frac{1}{2}$ -inch broad. The flowers yellowish, in spikes 2 to 4 inches long.—Creek-sides and swamps, Southern Queensland.

B.P.V.—Wood of a light colour, close-grained and tough; useful for any purpose where strength and durability are required.

MELALEUCA, *Linn.*

168a.—*M. SYMPHYOCARPA*, *F. v. M.* in *Trans. Phil. Inst. Vict.*, iii., 44; *Flora Austr.*, iii., 138.—A small tree, with oblong alternate leaves $1\frac{1}{2}$ to nearly 3 inches long, mostly vertical, many-nerved. Flowers in dense globular heads on the previous year's wood.—Islands of the Gulf of Carpentaria.

B.V.—Wood dark-coloured, close-grained, hard and prettily marked.

168b.—*M. ANGUSTIFOLIA*, *Gærtn.*, *Fruct.*, i., 172, t. 35; *Flora Austr.*, iii., 139. A small tree with alternate narrow leaves $1\frac{1}{2}$ to 2 inches long, distinctly 5-nerved; the flowers in dense terminal heads.—Endeavour River, Queensland.

B.P.V.—Wood of a dark colour, hard and tough. Excellent for posts and piles.

168c.—*M. ACACIOIDES*, *F. v. M.*, *Fragm.*, iii., 116; *Flora Austr.*, iii., 138.—A small tree; leaves alternate, oblong, 1 to 2 inches long, faintly 3 or 5-nerved, often vertical. Flowers small, in dense globular heads.—Islands of Torres Straits, and North Australia.

B.V.—Wood strong, of a dark colour.

169.—*M. LINARIIFOLIA*, *Sm.* in *Trans. Linn. Soc.*, iii., 278; *Flora Austr.*, iii., 140. A tall tree, the shoots hairy, leaves mostly opposite, linear, acute, $\frac{3}{4}$ to $1\frac{1}{4}$ inch long. The flowers in distinct pairs in spikes 1 to $1\frac{1}{2}$ inch long, the stamens in bundles often $\frac{1}{2}$ -inch long.—Southern and Northern Queensland and New South Wales.

B.P.V.—Wood of a dark-red colour, very durable; useful for building-stumps and piles for wharves.

169a.—*M. LEUCADENDRON*, *Linn.*, *Mant.*, 105; *Flora Austr.*, iii., 142. Paper-barked Tea-tree. Native name at the Mitchell, "Atchoourgo." A large tree, the bark white, spongy, in thin paper-like layers, the leaves alternate, 2 to 4 inches long, broad or narrow, with from 3 to 7 nerves; the flowers yellowish, in interrupted spikes, the axis growing out after flowering into a leafy branch.—Johnstone River, and other river-sides in Tropical Queensland.

B.P.V.—Wood of a pinkish colour, hard and close-grained, very valuable for underground work and wharf-piles.

170.—*M. LEUCADENDRON*, *Linn.* Var. *lancifolia*, *Bail.*, *Syn.*, 170. Paper-barked Tea-tree. Often a large tree, the bark in thin white layers, the leaves stiff, about 3 inches long, the end pointed; spikes of greenish-yellow flowers, often 2 together.—Common in the swamps of South Queensland.

One ton of fresh leaves yields 320 oz. of oil similar if not identical with cajeput.

B.P.V.—Wood of a pinkish grey colour, close-grained and firm; very useful for underground work.

171.—*M. LEUCADENDRON*, *Linn.* Var. *saligna*, *Bail.*, *Syn.*, 170. Drooping Paper-barked Tea-tree. A large tree, the bark in white papery layers, the branches long, slender, and drooping like the Weeping Willow. Leaves 6 or more inches long and about $\frac{1}{2}$ -inch wide; the flowers very distant on the spike, and the stamens sometimes stained with red.—Swamps and river-sides in Tropical Queensland.

B.P.V.—Wood of a light-grey colour, very durable, especially in underground work.

172.—*M. LEUCADENDRON*, *Linn.* Var. *Cunninghamii*, *Bail.*, *Syn.*, 171.—A small tree, the bark papery; leaves very stiff, large, and broad. Flowers large, yellowish, the spikes about 5 inches long.—Swamps of Tropical Queensland.

B.P.V.—Wood hard, of a dark colour, very durable.

172a.—*M. LEUCADENDRON*, Linn. Var. *Cunninghamii*. Differs from the last only in its flowers being of a dark-red colour.—Thursday and other islands of Torres Straits.

B.P.V.—Wood similar to the last.

One or other forms of *M. leucadendron* are found in North Australia, West Australia, New South Wales, and Queensland, in Australia; also in New Guinea and India, in which latter the oil called "cajeput" is obtained from its foliage.

172b.—*M. GENISTIFOLIA*, Sm. in Trans. Linn. Soc., iii., 277; Flora Austr., iii., 143. A tall tree, with a rough dark-coloured bark, the leaves narrow, about $\frac{1}{2}$ -inch or more long, with about 7 nerves; the flowers white, in oblong spikes.—Usually along river-sides in North and South Queensland, North Australia, and New South Wales.

B.P.V.—Wood of a grey colour, hard, close-grained, and tough.

ANGOPHORA, Cav.

174.—*A. SUBVELUTINA*, F. v. M., Fragm., i., 31; Flora Austr., iii., 184. Apple-tree. Tree of medium size, the bark persistent. Leaves broad and stalkless or with very short stalks, the netted veins prominent, velvety or grey. Flowers in a loose corymb.—Generally met with at the foot or on the side of hills in South Queensland and New South Wales.

In New South Wales this wood is much used by wheelwrights.—C. Moore, "Woods of New South Wales."

B.P.V.—Wood pinkish-grey, close-grained and tough.

175.—*A. INTERMEDIA*, DC., Prod., iii., 222; Flora Austr., iii., 184. Apple-tree. Tree of medium size, bark and the first leaves like the last species, but changing on the upper branches to leaves like a Gum-tree, long, narrow, and tapering to a point. Flowers also resembling *A. subvelutina*.—Interior, also on the coast side of the range in Queensland, and also in New South Wales and Victoria.

In New South Wales used in wheelwright work.—C. Moore, "Woods of New South Wales."

B.P.V.—Wood of a grey colour, close-grained and easily worked.

175a.—*A. WOODSIANA*, Bail., Syn. Ql. Fl. Tree resembling *A. intermedia*, but the foliage and flowers and fruit larger. The trunk also is found often with hollows full of liquid gum of a bright-red colour, like that of the Bloodwood (*E. corymbosa*).—Eight-mile Plains, near Brisbane.

B.P.V.—Wood of a pinkish colour, hard and heavy.

176.—*A. LANCEOLATA*, Cav., Ic., iv., 22, t. 339; Flora Austr., iii., 184. Rusty Gum; native name, "Toolookar." A large tree, the bark deciduous, having somewhat the appearance of Spotted Gum, the bark often stained a rusty-red colour from the gum; the leaves often narrow, willow-like, but at times an inch broad, but tapering towards the point. A very abundant flowering tree, the flowers large in bunches.—Common both inland and on to the coast, in South Queensland and also in New South Wales.

B.P.V.—Wood of a pinkish colour, hard, heavy.

EUCALYPTUS, *L'Her.*

177.—*E. PLANCHONIANA*, *F. v. M.*, *Fragm.*, xi., 43. Tree of medium size, the bark persistent, more or less fibrous. Leaves thick, curved, and tapering towards the point. Flowers 3 to 7, large, on the top of a flat stalk. Fruit large, often 1 inch long and marked with ribs.—Eight-mile Plains and other places in Southern Queensland and New South Wales.

B.P.V.—Wood of a grey colour, hard and heavy; useful for house-building.

177a.—*E. EUGENIODES*, *Sieb.* in *Spreng. Cur. poster.*, 195; *F. v. M.*, *Cens. Austr. Pl.*, 57. Stringybark: A tree of moderate size, with a fibrous persistent bark; leaves dark-green, very unequal-sided at the base; fruit nearly globular.—Southern Queensland, New South Wales, and Victoria.

B.P.V.—Wood of a pinkish colour, hard and tough; used in house-building, fencing-rails, &c.

178.—*E. ACMENIOIDES*, *Schau.* in *Walp. Rep.*, ii., 924; *Flora Austr.*, iii., 208. Stringybark. A moderate-sized tree with a fibrous persistent bark, the leaves paler on the under side. Fruit almost globular, the valves slightly exserted.—Queensland coast country, north and south; also in New South Wales.

B.P.V.—Wood of a grey colour, close in grain, hard and durable; used in house-building.

179.—*E. PILULARIS*, *Sm.* in *Trans. Linn. Soc.*, iii., 284; *Flora Austr.*, iii., 208. Blackbutt; native names, "Tcheergun" and "Toi." A very large tree, the bark persistent at the base, but falling off in strips from the upper part of the trunk and branches. Leaves thick, tapering from the base towards the point and more or less curved. Flower-lid conical. Fruit semiglobose, $\frac{1}{2}$ to nearly $\frac{1}{2}$ inch diameter.—Usually a mountain tree, but found also on level country near rivers in South Queensland; also in New South Wales and Victoria.

B.P.V.—Wood of a light-grey colour, hard, tough, and durable; used for house-building, fencing, and other work where strength and durability are required.

180.—*E. OCHROPHLOIA*, *F. v. M.*, *Fragm.*, xi., 36. Paroo Yellow-jacket. A moderate-sized tree, the bark of a light colour, somewhat spongy; the leaves somewhat thick, light-coloured. Flower-lid about $\frac{1}{2}$ -inch long; fruit about twice as long.—Paroo, Cunnamulla, and other inland places in Queensland and New South Wales.

B.V.—Wood of a brownish colour, hard, heavy, and close-grained.

180a.—*E. GRACILIS*, *F. v. M.* in *Trans. Vict. Inst.*, i., 35; *Fragm.*, ii., 55; *Flora Austr.*, iii., 211; also *Pl.* in *Muell. Eucalyp. and Brown's Forest Flora*. A small tree with white and grey stem from the patches of bark falling off at irregular times, like that of the Blue and the Grey Gum-trees. The leaves are thick and shiny as in the Paroo Yellow-jacket, green on both sides, the veins hardly discernible from the thickness of the leaves, slightly curved and about 3 or 4 inches long, and narrow; the flower-stalks bearing but a few small

flowers. Fruit somewhat jug-shaped, small, but in shape like those of the Common Bloodwood.—A small inland tree met with in all the Australian colonies.

EP.V.—Wood hard, heavy, and close in the grain, of a yellowish-grey colour, tough and durable.

Bl.—*E. HEMASTOMA*, *Sm.* in *Trans. Linn. Soc.*, iii., 285; *Flora Austr.*, iii., 212. White or Scribbly Gum; native name "Kurra-gurra." A moderate-sized tree, the bark very white, usually showing the serpentine marks left by some small boring insect; the leaves rather broad and with a peppermint-like scent. Flowers 6 to 8, on the top of an angular stalk. Fruit $\frac{1}{4}$ -inch in diameter, nearly globose, the top rim often coloured.—South Queensland and nearly if not quite into the tropics, usually on poor land; also in New South Wales, Victoria, and Tasmania.

The fresh leaves yield 672 oz. of oil from 1 ton. The gum contains 64.51 per cent. of kino tannin.

B.FV.—Wood of a grey or reddish colour, not durable if exposed.

182.—*E. MICROCOEYS*, *F. v. M.*, *Fragm.*, ii., 50; *Flora Austr.*, iii., 212. "Tee" of the natives; also called Turpentine and Peppermint. A large tree with a reddish fibrous persistent bark. Leaves narrow-ovate, about $\frac{1}{2}$ inches long, dark-green. Flowers with a yellowish tinge, the buds club-shaped, the cap very small. Fruit about $\frac{1}{4}$ -inch long.—A common tree on the hills of Southern Queensland; also in New South Wales.

One ton of fresh leaves yields 375 oz. of oil. The gum contains 53.32 per cent. of kino tannin.

B.P.V.—Wood of a grey colour, close-grained, very tough and durable, used for ship and house building purposes; also by the wheelwright for naves, felloes, and spokes.

183.—*E. POPULIFOLIA*, *Hook.*, *Icon. Pl.*, t. 879; *Flora Austr.*, iii., 214. Poplar Box. A small or moderate-sized tree, the bark grey, somewhat spongy, closely persistent. Leaves glossy green, thick, on longish stalks, usually about $1\frac{1}{2}$ inch to 3 inches broad, but at times much broader. Flowers very small.—Found in many places both inland and coast in Queensland, but not on rich land frequently; also in New South Wales.

B.P.V.—Wood of a grey or light-brown colour, very tough and strong, hard to work, but is a handsome wood when polished; used in house-building, dry-poles, and ship-building.

184.—*E. HEMIPHLOIA*, *F. v. M.*, *Fragm.*, ii., 62; *Flora Austr.*, iii., 216. Gumtopped Box. A tall tree, shedding its bark in long strips. Leaves often broad, thick, and long, tapering to a point. Flowers rather large, several on the top of an angular stalk, lid conical. Fruit oblong, about $\frac{1}{4}$ -inch long.—Common in South Queensland, sometimes in the tropical portions; also in New South Wales, South Australia, and Victoria.

B.P.V.—Wood of a yellowish-grey colour, very tough and elastic.

185.—*E. SIDEROPHLOIA*, *Benth.*, *Flora Austr.*, iii., 220. Ironbark; native name, "Tanderoo." A large tree with a blackish, deeply furrowed, thick bark, the leaves narrow-ovate, 3 to 6 inches long. Flowers in bunches at or near the ends of the branches. Fruit about $\frac{1}{4}$ -inch long.—South Queensland and New South Wales.

The gum contains 72·13 per cent. of kino tannin, and is totally soluble in water.

B.P.V.—WOOD of a grey colour, close-grained, hard, heavy, and very drable; useful for the large beams in buildings, railway sleepers, and other work where strength and durability are required.

185a.—*E. SIDEROPHLOIA*, *Benth.* Var. *rostrata*, *Flora Austr.*, iii., 220. Large-leaved Ironbark. A large tree, the bark black and thick, deeply furrowed, but still separable into layers. Leave very large, often from 2 to 6 inches wide on young trees.—About Tylor's Range, in Queensland; also in New South Wales.

B.P.V.—WOOD red, close in grain, considered the best of all the Ironbarks for building purposes; it is very heavy, or otherwise it might do for cabinet-work.

186.—*E. MELANOPHLOIA*, *F. v. M.* in *Journ. Linn. Soc.*, ii., 93; *Flora Austr.*, iii., 220. Silver-leaved Ironbark. A crooked-semmed spreading-headed tree, with opposite, stalkless, broad, silvery leaves, the bark dark and rugged. Flowers and fruit small.—On open country, both north and south in Queensland; also in New South Wales.

B.V.—WOOD towards the outside greyish, the centre red, close in the grain and hard.

187.—*E. CREBRA*, *F. v. M.* in *Journ. Linn. Soc.*, iii., 87; *Flora Austr.*, iii., 221. Narrow-leaved Ironbark. A small or medium-sized tree, with usually a greyish-coloured rough bark, the leaves long and narrow. Flowers small; fruit also small.—A common Queensland tree, north and south; also in New South Wales and North Australia.

B.P.V.—WOOD white near the bark; all the rest of a pinkish grey, close-grained, very tough and durable.

188.—*E. STAIGERIANA*, *F. v. M.*; *Bail.* in *Syn. Q. Fl.*, 176. Lemon-scented Ironbark. A small tree with a rugged irregularly fissured bark, the leaves having a greyish hue, narrow usually, but at times broad-ovate, 2 to 5 inches long, having a delightful lemon-like fragrance, flowering abundantly as a shrub. Fruit small.—Palmer River, Queensland.

One ton of the dry leaves yields 1,290 oz. of oil.

B.P.V.—WOOD of a red colour, hard and durable. The principal value of this tree is in the foliage for oil.

189.—*E. RAYERETIANA*, *F. v. M.*, *Fragm.*, x., 99. Thozet's Box or Iron Gum tree. A large tree with a scaly bark persistent on the trunk. Leaves dark-green, 3 to 5 inches long. Flowers very small, in rather large terminal panicles. Fruit minute.—Scrubs near Rockhampton, Queensland.

B.P.V.—WOOD of a dark-drab colour speckled with whit, close-grained, very hard and tough; valuable for building purposes; would also be useful for cabinet-work.

190.—*E. MICROTHECA*, *F. v. M.* in Journ. Linn. Soc., iii., 87; Flora Austr., iii., 228. Native names, "Jinbul" or "Kurleah" and "Codibar." A small tree, the bark somewhat persistent at the base but deciduous and white on the upper part of the stem; young branchlets reddish, but covered by a grey bloom. Leaves 3 to 6 inches long, pale-coloured on both sides. Fruit with the valves exserted.—Cunnamulla, in Queensland; also in New South Wales and South Australia.

B.I.V.—WOOD near the outside grey, the rest all of a rich deep-red colour; useful in building and cabinet-work, although perhaps too hard to work for the latter.

190a.—*E. ROBUSTA*, *Sm.*, Bot. Nov. Holl., 40, t. 13; Trans. Linn. Soc., iii., 283; Flora Austr., iii., 228. Swamp Mahogany Gum; native name, "Kimbarra" or "Gnorpin." A large tree with rugged bark. The leaves large, broadly ovate or long and then narrower, very stiff and thick, of a dark-green colour. Flowers large, on a more or less flattened stalk. Fruit often $\frac{1}{2}$ -inch long.—Stradbroke Island and at the Logan River, in Queensland; also in New South Wales.

B.P.V.—WOOD of a deep-red colour, close-grained; a useful building wood.

190b.—*E. PALLIDIFOLIA*, *F. v. M.*, Fragm., iii., 131; Flora Austr., ii., 236. A small tree with smooth ash-coloured bark and foliage. Leaves oblong, about 3 inches long, rather thick; the flower-stalk bearing 4 to 6 rather small flowers. Fruit nearly globose.—Gulf country in Queensland, and North Australia.

B.P.V.—WOOD yellow near the bark, the rest red, hard, close-grained and prettily mottled.

191.—*E. BOTRYOIDES*, *Sm.* in Trans. Linn. Soc., iii., 286; Flora Austr., iii., 229. Woolly-butt of some localities. A very large tree, the bark rugged and persistent for a distance up the stem, after which it is white and deciduous. Leaves long, thick, the base broad but tapering towards the point. Flowers on a flattened footstalk. Fruit smooth, $\frac{1}{2}$ to nearly $\frac{1}{2}$ inch long, but narrow.—In mountain gullies and river flats in Southern Queensland; also in New South Wales, Victoria, and Tasmania.

B.P.V.—WOOD of a red colour, close in grain, hard, tough, and durable; useful in large buildings, wheelwrights' work, and in all works where large beams of hardwood are required.

191a.—*E. DEALBATA*, *A. Cunn.*; *Schau.* in Walp. Rep., ii., 924; Flora Austr., iii., 239. Stanthorpe Messmate. A moderate-sized tree with spreading head and rough persistent bark at the base or on all the trunk; all the younger trees, and often a great part of the foliage of the older ones, of a silvery-grey colour, the leaves often then broadly ovate. Flowers in small bunches at the axil of the leaves on short stalks. Fruit almost globular.—Stanthorpe and other inland localities in Queensland, also in New South Wales.

B.P.V.—WOOD of a pinkish colour, only fit for being used in the whole log as it is apt to split, and is usually full of hollows containing gum. The wood of this and similar Eucalypts is very durable when used for underground work.

191b.—*E. STUARTIANA*, *F. v. M.* Stanthorpe Box. A moderate-sized tree with a soft persistent bark, the foliage in a young state perhaps grey like *E. dealbata*, which in many respects this tree resembles. The leaves are on rather long stalks of often a reddish colour tapering towards the apex and often curved; the flowers small in heads on a rather short stalk, in the axils of the leaves, but the fruiting-heads usually below the leaves on account of the shoot growing out and the subtending leaves having fallen.—Found on poor land, Stanthorpe, Queensland; also in New South Wales, Victoria, and Tasmania.

B.P.V.—Wood of a grey colour, hard, tough, and durable.

192.—*E. ROSTRATA*, *Schlecht.*, *Linneæ*, xx., 655; *Flora Austr.*, iii., 240. Stanthorpe Yellow-jacket. Tree of moderate size with deciduous white bark. Leaves 3 to 6 inches long, the flower-buds with a prominent beak.—Stanthorpe and other localities in South Queensland.

B.P.V.—Wood of a dark colour, close-grained, strong, and durable if kept dry.

192a.—*E. EXSESTA*, *F. v. M.* in *Journ. Linn. Soc.*, iii., 85; *Flora Austr.*, iii., 241. A moderate-sized tree, bark more or less deciduous; the leaves 3 to 6 inches long, tapering towards the point. Fruit nearly globular, the valves protruding.—Along the banks of inland rivers at Cunnamulla and other places in Queensland.

B.P.V.—Wood of a pinkish colour, hard, tough, and durable.

193.—*E. TERETICORNIS*, *Sm.*, *Bot. Nov. Holl.*, 41, and in *Trans. Linn. Soc.*, iii., 284; *Flora Austr.*, iii., 241. Blue Gum; native name, "Mungara." A tall handsome tree, the bark deciduous, leaving here and there patches of a bluish hue. Leaves 4 to 6 inches long; the flowers with a lid often more than $\frac{1}{2}$ -inch long and of a nearly white colour. Fruit nearly globular.—Common on good land in Queensland, north and south; also in New South Wales and Victoria.

B.P.V.—Wood of a red colour (called Blue Gum from the supposed blue colour of the bark), close-grained, tough and durable; used for building and many other purposes.

194.—*E. PLATYPHYLLA*, *F. v. M.* in *Journ. Linn. Soc.*, iii., 93; *Flora Austr.*, iii., 242. Broad-leaved Poplar Gum. Usually a tree of moderate size, but sometimes large; both bark and leaves deciduous; the leaves often very large, somewhat heart-shaped or resembling large Poplar-leaves, 3 to 10 inches diameter.—Tropical Queensland and North Australia, on the islands of the Gulf of Carpentaria, and New Guinea.

B.V.—Wood deep-red, subject to gum-veins, hard and close-grained; considered by some very durable as fencing material.

195.—*E. SALIGNA*, *Sm.* in *Trans. Linn. Soc.*, iii., 285; *Flora Austr.*, iii., 245. Grey Gum. A tall tree with deciduous rather thick bark of a greyish colour. Leaves 3 to over 6 inches long, much narrowing towards the point. Flowers not large, several together upon the top of an angular stalk; flower-lid conical.—Southern Queensland, usually plentiful on ridges; also in New South Wales.

B.P.V.—Wood very tough and close-grained, of a grey colour, very hard.

196.—*E. RESINIFERA*, *Sm.* in *White Voy.*, 231, in *Trans. Linn. Soc.*, iii., 284, and *Exot. Bot.*, t. 84; *Flora Austr.*, iii., 245. "Jimmy Low." Usually a very large tree with a rough, reddish, fibrous bark; the leaves large, straight or curved, and tapering towards the point; the stalk of the flowers more or less flattened.—In a few places in South Queensland, perhaps the finest at Maroochie; also in New South Wales.

The gum contains 65·57 per cent. of kino tannin.

B.P.V.—WOOD of a rich red colour, from which it is called by some Mahogany; strong and durable; most useful for piles, fencing-posts, and the large beams in buildings.

196a.—*E. CLAVIGERA*, *A. Cunn.* in *Walp. Rep.*, ii., 926; *Flora Austr.*, iii., 250. A tree of moderate size with grey bark, opposite nearly stalkless leaves, and large bunches of flowers on rather long stalklets, club-shaped in the buds.—Islands of the Gulf of Carpentaria.

B.V.—WOOD of a dark-brown colour, close in the grain, hard and durable.

196b.—*E. PHENICEA*, *F. v. M.* in *Journ. Linn. Soc.*, iii., 91; *Flora Austr.*, iii., 251. Tree of medium size with a smooth bark. Leaves 4 to 6 inches, netted. Flowers in bunches below the leaves, the stalklets of each flower rather long.—Gulf country, Queensland.

From the fragmentary specimen sent in with the log it is impossible to speak with certainty of this, but it is probably a form of *E. phænicea*, with fewer flowers in the bunch and whitish stamens.

B.P.V.—WOOD grey for a good distance in, but the centre dark-brown, tough and heavy.

197.—*E. TESSELLARIS*, *F. v. M.* Moreton Bay Ash. A very graceful often large tree, with the bark persistent and cracked into squares on the lower part of the trunk, but deciduous on the upper part and branches; the flowers in scanty bunches. Fruit ovoid, more than $\frac{1}{2}$ -inch long, and more fragile than many others.—Found throughout the Queensland coast country and North Australia.

B.P.V.—WOOD of a dark-brown colour except near the bark, close-grained, tough and durable, especially that of the Northern trees.

198.—*E. TESSELLARIS*, *F. v. M.* Var. *Dallachyana*, *Flora Austr.*, iii., 251. Usually a small crooked-stemmed tree, without the tessellated bark at the base, but fruit resembling the normal form.—Rockhampton.

B.P.V.—WOOD brownish, tough and close-grained.

198a.—*E. SETOSA*, *Schau.* in *Walp. Rep.*, ii., 926; *Flora Austr.*, iii., 254. A small tree, the branchlets and inflorescence often covered with stiff rusty-coloured hairs. Leaves opposite, ovate, stalkless. Fruit nearly globose or pitcher-shaped.—Tropical Queensland, islands of the Gulf of Carpentaria, and North Australia.

B.P.V.—WOOD of a dark-brownish colour, subject to gum-veins, therefore only fit for using in the whole log; hard, strong, and durable.

199.—*E. CORYMBOSA*, *Sm.*, *Nov. Holl.*, 43, and in *Trans. Linn. Soc.*, iii., 287; *Flora Austr.*, iii., 256. Bloodwood; native name, "Boona." A tall tree with persistent, spongy, somewhat fibrous bark, the leaves rather thick, tapering towards the apex, 3 to 6 inches long,

often hispid with glandular hairs when shooting from an old butt. Flowers large; fruit pitcher-shaped, $\frac{1}{2}$ to nearly 1 inch long.—The commonest Eucalypt in Queensland; found wide-spread, north and south; also in North Australia and New South Wales.

The gum contains 43·71 per cent. of kino tannin; it contains also a great deal of insoluble matter kinoised, especially catechu and kionoin.—*K. T. Staiger*.

B.P.V.—WOOD of a red colour containing large cavities full of gum; a very durable wood if used whole, as for piles, posts, &c.

199a.—*E. CORYMBOSA*, *Sm.* Var. *terminalis*, *F. v. M.* The foliage of this species or form is of a glaucous colour and the bark lighter and, though spongy, not so rough as in the normal form. The fruit is somewhat larger and more pitcher-shaped.—A tree of the Tropical Queensland coast.

B.P.V.—WOOD red, subject to large gum-veins.

200.—*E. TRACHYPHLOIA*, *F. v. M.*, *Journ. Linn. Soc.*, iii., 90; *Flora Austr.*, iii., 221. White Bloodwood. A moderate-sized tree, with a dense foliage, the bark persistent, spongy-fibrous. Leaves 4 or more inches long. Flowers in terminal panicles. Fruit pitcher-shaped, about $\frac{1}{2}$ -inch long.—Found on or near the ranges of Southern Queensland.

B.P.V.—WOOD of a grey colour, hard, heavy, and durable; a useful, strong, tough timber.

201.—*E. BAILEYANA*, *F. v. M.*, *Fragm.*, xi., 37; *Syn. Ql. Fl.*, 181. Rough Stringybark. A tall tree, the bark very rough and fibrous. Leaves rather thick. Flowers rather small, 5 to 10 on the top of the stalk. Fruit pitcher-shaped, 3-celled, the seeds oblong and rather large.—Eight-mile Plains, near Brisbane.

One ton of fresh leaves yields 322 oz. of oil.

B.P.V.—WOOD of a light-grey colour, very tough, suitable for tool-handles and other purposes where toughness is required; the bark yields a strong fibre.

202.—*E. MACULATA*, *J. D. Hook.*, *Ic. Pl.*, t. 619; *Flora Austr.*, iii., 258. Spotted Gum; native name, "Urara." A fine large handsome tree, the bark deciduous, falling off in patches, leaving an indentation where each piece was peltately attached, thus giving a spotted appearance to the trunk; leaves often very large and coarse. Flowers large. Fruit semi-globose, or almost pitcher-like.—Southern Queensland, usually on stony ridges; also in New South Wales.

The gum contains 34·97 per cent. of kino tannin.

B.P.V.—WOOD of a light-grey colour, very elastic and durable, valuable in wheelwright and carriage work.

203.—*E. MACULATA*, *Hook.* Var. *citriodora*, *Bail.*, *Syn.*, 181. Citron-scented Gum. Only differing from the normal form in the citron-like fragrance of its foliage.—Gladstone and Rockhampton.

B.P.V.—WOOD of perhaps a darker colour, but very like the last.

TRISTANIA, *R. Br.*

204.—*T. SUAVEOLENS*, *Sm.* in *Rees. Cycl.*, xxxvi.; *Flora Austr.*, iii., 262. Swamp Mahogany; native name, "Boolerchu." A small or large tree, the bark somewhat fibrous and persistent, the leaves oval,

8 or more inches long and more or less downy or hoary as well as the young shoots. Flowers in pretty, white, small bunches; the fruit usually under $\frac{1}{2}$ -inch diameter.—All over the Queensland coast lands, often in swamps; also in North Australia and New South Wales.

B.P.V.—WOOD of a red colour, resembling Spanish Mahogany, hard and close-grained, but best fitted for underground work; extensively used for piles, as it is found to resist the ravages of the teredo longer than any wood as yet tried in this colony.

205.—*T. SUAVEOLENS*, Sm. Var. *glabrescens*, Syn. Ql. Fl., 182. Native name, "Boobarchoo." This differs from the normal form only in the want of the hoariness of its foliage, the leaves being a bright shiny-green.—Found in low, almost swampy, localities, South Queensland.

B.P.V.—WOOD similar to the last, and used for the same purposes.

206.—*T. CONFERTA*, R. Br. in Ait. Hort. Kew, ed. 2, iv., 417; Flora Austr., iii., 263. Brisbane Box; native name, "Tubbil-pulla." A fine handsome tree, the bark persistent on the base of the stem, deciduous above and on the branches of a brownish colour. Leaves crowded at the ends of the branches and often large; the buds are usually protected by large dry scales which fall as it bursts into fresh growth in the spring. Flowers showy. Fruit hemispherical, $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter.—Found north and south on the Queensland ranges; also in New South Wales.

B.P.V.—WOOD of a dark-grey colour; hard, tough, and close in the grain; when kept dry very durable. Shrinks very much in drying; used for joists, knees of vessels, and by the wheelwright.

206a.—*T. EXILIFLORA*, F. v. M., Fragm., v., 11; Flora Austr., iii., 264. A medium-sized tree, with smooth bark, the inflorescence slightly hoary; the leaves long, narrow; flowers yellow; fruit obovoid-globular.—Tropical Queensland.

B.P.V.—WOOD of a dark colour, close in the grain, very tough and elastic; useful for tool-handles.

206b.—*T. LAURINA*, R. Br. in Ait. Hort. Kew, ed. 2, iv., 417; Flora Austr., iii., 264. Tree usually of moderate size, but sometimes found very large; the bark smooth or slightly fibrous; the young shoots somewhat angular and often purplish. Leaves long, narrow, and deep-green. Flowers yellow.—Found on the borders of rivers in South Queensland, from Maroochie to the border; also in New South Wales and Victoria, in Gippsland.

B.P.V.—WOOD of a dark colour, close-grained, very tough and strong; useful for tool-handles.

206c.—*T. MACROSPERMA*, F. v. M., Notes on Papuan Plants, 104. Tree of medium size, the bark somewhat fibrous. Leaves oval, 2 to 3 or more inches long, on slender stalks. Flowers in spreading terminal panicle. Capsule oval, 3-celled, seeds winged. Probably this species, but no flower seen.—Thursday Island, Torres Straits, and New Guinea.

B.P.V.—WOOD of a straw colour, close-grained, very hard and tough, stands well in drying, and will likely prove valuable for building purposes. So far as I can determine from the specimens received from Thursday Island, this seems identical with the New Guinea tree.

SYNCARPIA, *Ten.*

207.—*S. LAURIFOLIA*, *Ten.* in Mem. Soc. Ital. Sc. Moden., xxii., t. 1; Flora Austr., iii., 265. A tall erect tree with a fissured, fibrous, persistent bark, the leaves being clustered at the ends of the branches so as to appear whorled; smooth on the upper side but more or less hoary beneath, 3 or 4 inches long. The flowers in heads of from 6 to 10 flowers. The fruits joined together, forming a head.—Southern Queensland, and also in New South Wales.

B.P.V.—Wood of a light colour near the bark, but all the rest dark-brown; easy to work, but shrinks and warps much in drying.

208.—*S. LEPTOPETALA*, *F. v. M.*, *Fragm.*, i., 79; Flora Austr., iii., 266. A small tree minutely hoary. Leaves ovate, pointed, 2 to 4 inches long. Flowers small, in dense globular heads on slender stalks.—A tree of river-side scrubs, Southern Queensland and New South Wales.

B.P.V.—Wood of a light colour, close-grained, hard, and tough.

209.—*S. HILLII*, *Bail.* in Proc. Roy. Soc. Ql., i., 86. Turpentine-tree, of Frazer's Island; native name, "Peebeen." A large tree, with a thick, fibrous, deeply-fissured bark; the leaves ovate, 4 to 6 inches long and 2 to 4 broad. Flowers united in heads, usually a whorl of 6 large flowers and a central one forming the head; the fruiting heads about 1½ inch across.—Frazer's Island, Queensland, is, so far as at present known, its only habitation.

The bark contains 7·68 per cent. of tannin.

B.P.V.—Wood of a dark-pink colour, close in grain and tough; a useful building wood.

LYSICARPUS, *F. v. M.*

210.—*L. TERNIFOLIUS*, *F. v. M.* in Trans. Phil. Inst., ii., 68; Flora Austr., iii., 267. Tom Russell's Mahogany. An erect pine-like tree with narrow-linear leaves, opposite or in whorls of 3, 2 to 3 inches long. Flowers rather small, solitary or in bunches.—Usually found on the ranges or in brigalow scrubs in Queensland.

B.P.V.—Wood light-brown, well-marked, hard, heavy, and elastic; suitable for cabinet-work; has been largely used for railway sleepers.

BACKHOUSIA.

212.—*B. MYRTIFOLIA*, *H. et. Harv.* in Bot. Mag., t., 4133; Flora Austr., iii., 269. A small tree, the under side of leaves and young shoots silky-hairy. Leaves narrow-ovate, scented, 1 or 2 inches long; the flowers white, myrtle-like.—A river-side tree in Southern Queensland and New South Wales.

B.P.V.—Wood of a light-grey colour, darker in the centre; close in the grain; very hard and tough.

212b.—*B. BANCROFTII*, *Bail. et F. v. M.* Johnstone River or Langdon's Hardwood. A tall handsome tree with a rather thin, grey, scaly bark. Leaves in opposite pairs, ovate; those near the flowers small, but the others from 2 to 4 inches long, the midrib and primary veins prominent. Flowers in a more or less spreading terminal panicle, white,

the petals dropping, but the sepals persisting and enlarging after flowering, but of unequal size. Fruit a dry capsule, with about 12 seeds.—Johnstone River, Queensland.

B.P.V.—Wood of a light-grey colour, hard, close-grained, something like the teak, useful as a building timber; rather darker towards the centre in large trees; splits straight and freely.

213.—*B. CITRIODORA*, *F.v.M.*, *Fragm.*, i., 78; *Flora Austr.*, iii., 270. A small tree, slightly hoary, with leaves of a verbena-like fragrance, 3 to 5 inches long. Flowers numerous, in umbel-like clusters.—Maroochie, the Pine River, and some few other localities in Southern Queensland.

B.P.V.—Wood close-grained, hard, of a light-pink colour.

RHODOMYRTUS, *DC.*

214.—*R. PSIDIODES*, *Benth.*, *Flora Austr.*, iii., 272. A small tree, more or less hoary, the leaves 3 to 5 inches long, the margins often recurved, and here and there stained red. Flowers rather large, and fruit soft, oval, yellow, the size of a pigeon's egg.—Borders of creeks in Southern Queensland; also in New South Wales.

B.V.—Wood light-coloured, close-grained and tough.

216.—*R. MACROCARPA*, *Benth.*, *Flora Austr.*, iii., 273. Native Loquat. A tree of moderate size, with oval-oblong leaves of thin texture, 6 to 10 inches long, the veins prominent; the flower-stalks bearing 1 or 3 flowers. Fruit cylindrical, 1 inch long or rather more.—Scrubs of Tropical Queensland.

Wood of a light-grey colour, hard and tough.

MYRTUS, *Linn.*

217.—*M. HILLII*, *Benth.*, *Flora Austr.*, iii., 275. Scrub Ironwood. A small tree with a smooth, very thin, often reddish bark. Leaves glossy, ovate, pointed, 1 or 2 inches long. Flowers small on rather long slender pedicels. Fruit globular, small, containing several seeds.—Scrubs of Queensland, north and south.

B.P.V.—Wood of a light-grey colour, close in the grain, and very hard; warps in drying.

217a.—*M. RACEMULOSA*, *Benth.*, *Flora Austr.*, iii., 276. A small tree with rather roughish bark. Leaves pointed, ovate, about 2 inches long, the flowers in a somewhat loose axillary raceme. Fruit globular, containing 1 or 2 nearly globular seeds.—Scrubs of Tropical Queensland.

B.V.—Wood of a close grain and tough; warps in drying.

RHODAMNIA, *Jack.*

218a.—*R. SESSILIFLORA*, *Benth.*, *Flora Austr.*, iii., 277. A medium-sized tree with a somewhat fibrous bark, the branchlets slightly hoary; the leaves narrow-ovate, 3 to 5 inches long, rather thin. Flowers often 3 together in the axils, stalkless. Fruit globular, with 1 to 4 seeds.—Scrubs of Tropical Queensland.

B.P.V.—Wood of a dark colour, close-grained and tough.

EUGENIA, *Linn.*

221.—*E. SMITHII*, *Poir.*, Dict. Suppl., iii., 126; Flora Austr., iii., 282. Lilly-pilly; native name, "Coochin-coochin." Usually a small tree, the bark somewhat fibrous. Leaves narrow-oval, 2 or 3 inches long. Flowers small, in a terminal panicle. Fruit white, stained with purple, round, $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter.—Many parts of Queensland, as top of Bunya and other mountains, along the borders of creeks, &c., both north and south; North Australia, New South Wales, and Victoria.

B.P.V.—Wood of a dark colour, close-grained, tough; warps in drying.

222.—*E. VENTENATII*, *Benth.*, Flora Austr., iii., 283. Water Gum. A large spreading-headed tree, the branches often drooping, the oblong leaves 4 to 6 inches long, of a lively-green colour, finely veined. Flowers in rather large spreading panicles. Fruit round, greenish-white, about $\frac{1}{2}$ -inch diameter, but often larger. — Found bordering creeks and rivers in North and South Queensland, also in New South Wales.

Used in New South Wales for boat-building and handles of tools.—*C. Moore*, "Woods of New South Wales."

B.P.V.—Wood of a grey colour, soft and easy to work; might be suitable for cabinet-work.

222a.—*E. LEPTANTHA*, *Wight*, Illustr., ii., 15, and Ic., t. 528; Flora Austr., iii., 283. Tree, the foliage pale, inflorescence hoary. Leaves oval to oblong on short stalks. Flowers in short bunches on the previous year's wood at the knots formed by old leaves, the calyx-tube $\frac{1}{2}$ -inch long, narrow, club-shaped.—Scrubs of Tropical Queensland.

B.P.V.—Wood of a dark colour, close-grained, easily worked; suitable for flooring-boards of verandahs.

223.—*E. JAMBOLANA*, *Lam.*, Dict., iii., 198; Flora Austr., iii., 283. A tall tree, the bark with depressions where the scaly flakes have fallen off, with the leaves oblong, somewhat stiff, often ending in a blunt point, 4 to 6 inches long and $1\frac{1}{2}$ to over 2 inches broad, often glossy. Flowers rather large, few in forked bunches on the branches below the leaves. Fruit over 1 inch in diameter, containing 1 seed. —Tropical scrubs in Queensland and North Australia; also in India, where the wood is considered useful for building purposes, the bark for tanning and dyeing, and also for medicine in cases of dysentery.

B.P.V.—Wood of a flesh colour, close in the grain, stands well in drying; suitable for house-building purposes.

224.—*E. CORMIFLORA*, *F. v. M.*, Fragm., v., 32; Flora Austr., iii., 284. A tree of moderate size with a somewhat scaly bark, with a much-knotted belt 5 or 6 feet from the ground, and from these knots it blossoms and fruits. Flowers large, often of a pale-pink colour. Fruit oval, white on some trees, and 2 inches long.—Scrubs of Tropical Queensland.

B.P.V.—Wood of a dark colour, close-grained and tough. The knobby inequalities noticeable on the bark of the plank piece are the knots from which the flowers are produced year after year.

226.—*E. GRANDIS*, *Wight*, *Illustr.*, ii., 17, and *l.c.*, t. 614; *Flora Austr.*, iii., 285. White Apple. A fine tree, the bark peeling off in very thin skin-like flakes. Leaves thick, oval-oblong, 4 to 6 inches long, shiny. Flowers large, terminal or near the ends of the branches. Fruit globular, white, more than 1 inch in diameter, containing 1 or 2 large seeds.—Tropical Queensland, also in India.

B.P.V.—Wood light-brown, close-grained, hard and tough; might serve for making staves for rum-casks; suitable also for building purposes.

227.—*E. SUBORBICULARIS*, *Benth.*, *Flora Austr.*, iii., 285. A large tree, the bark peeling off in thin skin-like flakes, with broadly obovate leaves 4 to 6 inches long, the parallel divergent veins prominent and joining within the margin, forming a looped intramarginal one. Flowers large.—Tropical Queensland.

B.P.V.—Wood of a dark-grey colour, with peculiar corky concentric rings several inches asunder. The natives of the Johnstone River form their canoes out of the trunk of this tree.

227a.—*E. WILSONII*, *F.v.M.*, *Fragm.*, v., 12; *Flora Austr.*, iii., 285. Tree of moderate size. Leaves 5 or 6 inches long, the transverse veins fine. Flowers large in terminal bunches, the stamens reddish-purple. Fruit ovoid, about $\frac{1}{2}$ -inch long.—Tropical Queensland.

B.P.V.—Wood of a uniform dark-brown colour, close-grained, hard, and tough; useful for tool-handles.

228.—*E. MYRTIFOLIA*, *Sims*, *Bot. Mag.*, t. 2230; *Flora Austr.*, iii., 286. Scrub Cherry. A large tree with a somewhat fibrous bark, the leaves oval-oblong or pointed, 2 to 3 inches long, the transverse veins prominent. Flowers rather large. Fruit ovoid or oblong, red.—Not uncommon in most Queensland scrubs. Trees very large in mountain scrubs; also in New South Wales.

B.P.V.—Wood of a light-grey, close in the grain; suitable for tool-handles on account of its toughness. The fruit is used for jam and wine making.

BARRINGTONIA, *R. et G. Forst.*

229.—*B. SPECTOSA*, *R. et G. Forst.*, *Gen.*, 76, t. 38. A rather large tree, the long ovate leaves clustered at the ends of the thick branches. The flowers large in terminal racemes, the stalklets 1 or 2 inches long. Calyx of 2 or 3 oblong leaves, the petals twice as long as these calyx-leaves. Stamens numerous, red, 2 to 4 inches long. Fruit large and 4-angled.—Found on the Tropical Queensland coast, New Guinea, India, the Indian Archipelago, and the Pacific Islands.

B.P.V.—Wood of yellow colour, tough and firm; might be useful in cabinet-work.

CAREYA, *Roxb.*

230.—*C. AUSTRALIS*, *F.v.M.*, *Fragm.*, v., 183, and *Flora Austr.*, iii., 289. Native names on the Cloncurry, "Go-onje" and "Gunthamarrah," and on the Mitchell, "Ootcho." Usually a stunted, small, crooked tree with a corky bark; the leaves obtuse, tapering into a rather long stalk. Flowers large, terminal, the stamens very long. Fruit ovoid.—Tropical Queensland coast, and North Australia.

B.P.V.—Wood of a light-grey colour, red in the centre, close in the grain and tough; works easily.

Order LYTHRARIÆ.

LAGERSTREEMIA, *Linn.*

231.—*L. ARCHERIANA*, *Bail.* in *Syn. Ql. Fl.*, 196. A small tree with a close, thin, smooth bark of a whitish colour. The leaves oblong, 3 to 6 inches long, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches wide, downy on the under side. Flowers a lilac-purple in large panicles.—Palmer River, Queensland.

B.V.—Wood firm, of a brown colour.

Order SAMYDACEÆ.

HOMALIUM, *Jacq.*

232.—*H. VITIENSE*, *Benth.* in *Journ. Linn. Soc.*, iv., 36; *Flora Austr.*, iii., 310. A moderate-sized tree, the leaves broadly ovate, with wavy margins, 2 to 4 inches long. Flowers in spikes.—Rockhampton scrubs, Queensland; also in New Caledonia and Fiji.

B.P.V.—Wood white, close in grain; suitable for cabinet-work.

Order ARALIACEÆ.

PANAX, *Linn.*

232a.—*P. MURRAYI*, *F. v. M.*, *Fragm.*, ii., 106; *Flora Austr.*, iii., 381. A very handsome tree, the leaves simply pinnate on young trees 5 to 6 feet long, with the leaflets 8 to 12 inches long, entire or slightly toothed.—Rockingham Bay and Johnstone River in the north and Mount Mistake Range in the south of Queensland; also in New South Wales.

B.P.V.—Wood of light colour, soft and light; would make good lining-boards.

233.—*P. ELEGANS*, *F. v. M.* in *Trans. Phil. Inst. Vict.*, ii., 63; *Flora Austr.*, iii., 383. Mowbullan Whitewood; native name at Bunya Mountains, "Greyanger." A tall and sometimes large tree, the foliage generally at the ends of the branches; the leaves very large, wide-spreading, and much divided into ovate leaflets. Flowers in a very large, much-branched, dark-coloured terminal panicle.—In all the coast scrubs of Queensland, forming often a large tree in mountain scrubs; also in New South Wales.

B.P.V.—Wood soft, light, and elastic; might suit for cricket-bats, excellent for lining-boards; will likely prove a most useful wood to the musical instrument makers.

BRASSAIA, *Endl.*

235.—*B. ACTINOPHYLLA*, *Endl.*, *Nov. Stirp. Dec.*, 89; *Flora Austr.*, iii., 385. Umbrella-tree. A very handsome small tree, the leaves on long stalks, with 7 to 16 stalked oblong leaflets at the top, each from 6 to 12 inches long. Flowers in small heads along long, erect, stout spikes, the whole inflorescence red.—Tropical Queensland.

B.P.V.—Wood soft, close-grained, dark

Order CORNACEÆ.

MARLEA, Roxb.

237.—*M. VITIENSIS*, *Benth.*, *Flora Austr.*, iii., 386. Var. *tomentosa*. Musk-wood. A moderate-sized tree. The leaves ovate-oblong, more or less velvety, often have a small dimple formed in the axils of the principal veins. Flowers hairy, fruit ovoid.—Not uncommon on the borders of rivers, both north and south, in Queensland.

B.P.V.—Wood of a yellow colour towards the bark, the centre black, close in the grain, with a musk-like scent; an excellent wood for cabinet-work.

Order CAPRIFOLIACEÆ.

SAMBUCUS, *Linn.*

238.—*S. XANTHOCARPUS*, *F. v. M.* in *Kew Journ.*, viii., 145, and in *Trans. Phil. Inst. Vict.*, i., 42; *Pl. Vict.*, t. 29; *Flora Austr.*, iii., 398. Native Elderberry. A tall shrub or small tree, with a light-coloured corky bark and light-green pinnate leaves. Flowers white, berries yellow.—Common on the borders of scrubs in South Queensland; also in New South Wales and Victoria.

B.V.—Wood soft, light and pale-coloured.

Order RUBIACEÆ.

SARCOCEPHALUS, *Afz.*

239.—*S. CORDATUS*, *Miq.* in *Flora Ind. Bot.*, ii., 133; *Flora Austr.*, iii., 402. Leichhardt-tree or Canary-wood. Native name on the Mitchell, "Oolpanje"; on the Cloncurry, "Coobiaby." A large tree with a thick, soft, corky bark of a more or less yellowish colour; the opposite leaves very large, with broad stipules at their base. Flowers in globose heads, yellow. Fruit a globular mass.—Tropical Queensland, North Australia; widely spread in India, also in the Archipelago, and Tropical Africa.

The wood of this tree is used in Burmah and India for sandals, common furniture, doors, &c., but is considered a poor perishable wood.

B.P.V.—Wood of a dark-yellow colour, close-grained, soft, and having a strong musk-like odour when fresh cut; useful both to the carpenter and cabinet-maker. The wood also furnishes a good dye.

RANDIA, *Linn.*

240.—*R. FITZALANI*, *F. v. M.* in *Flora Austr.*, iii., 411. A slender-stemmed tree with oblong, glossy, green leaves, often more than 6 inches long and 2 or 3 inches wide. Flowers white, rather large. Fruit oblong or globular, often 4 inches long and 2 inches diameter.—Scrubs of Tropical Queensland.

B.P.V.—Wood straw-coloured, close in grain, hard and tough.

241.—*R. DENSIFLORA*, *Benth.* in *Flora Hongk.*, 155; *Flora Austr.*, iii., 412. A small tree with oval-oblong leaves, somewhat thick and shining; the flowers crowded in the axils. Berries globular.—Tropical Queensland, North Australia, New Guinea, and Hongkong.

B.P.V.—Wood of a light colour, very close in the grain, hard and tough; might prove suitable for wood-stamps.

†ARDENIA, *Linn.*

242a.—*G. MACGILLIVRAI*, *VAR.* (or perhaps a new species between that and *G. megasperma*, but better specimens must be had before it can be fully determined). The leaves on the shoots received were of a rather thin texture, ovate-lanceolate, with tufts of hairs in the axils of the principal veins, otherwise glabrous; petioles short. Flowers solitary, terminal on a peduncle of 1 inch or more long. Calyx-tube ribbed, the 6 lobes nearly as long as the corolla-tube. Corolla-tube 1 to 1½ inch long, the 6 lobes about 1 inch long.

B.P.V.—Wood of a light colour, firm and close in the grain.

GUETTARDA, *Linn.*

244.—*G. PUTAMINOSA*, *F. v. M.* in *Fragm.*, ix., 183; *Flora Austr.*, iii., 419.—A small tree, the young parts often silky; the leaves oblong, about 1 inch long. The flowers in the axils, small; fruit about ¼-inch long.—Tropical Queensland.

B.P.V.—Wood of a light yellowish colour, quite equal to Box; the grain is close, and it may prove suitable for engraving.

TIMONIUS, *Rumph.*

245.—*T. RUMPHII*, *DC.* in *Prod.*, iv., 461; *Flora Austr.*, iii., 417. A tree of moderate size, the bark somewhat fibrous. Leaves narrow-ovate, pointed, and with the young shoots often silky. Flowers small; fruit globular, ½ to ¾ inch in diameter.—Moreton Bay and Taylor's Range in South Queensland. Common on the borders of rivers in Tropical Queensland, North Australia; also in Timor, Amboyna, and Sumatra.

B.P.V.—Wood light in colour and close in grain, suitable for lining-boards; is easily worked, resembling somewhat the English Sycamore.

HODGKINSONIA, *F. v. M.*

246.—*H. OVATIFLORA*, *F. v. M.* in *Fragm.*, ii., 132; *Flora Austr.*, iii., 420. A small tree, the branches slender; leaves ovate, 2 or 3 inches long; the flower-stalks bearing a few almost delicate globular flowers; the fruit small, nearly globose.—Scrubs of Southern Queensland and New South Wales.

B.V.—Wood white, close-grained and firm.

PLECTRONIA.

247.—*P. LATIFOLIA*, *F. v. M.* in *Flora Austr.*, iii., 421. A small tree with broad deep-green leaves, the veins distant. Flowers small, white; berries small.—Southern Queensland, on the borders of river scrubs; also in New South Wales, South Australia, and West Australia.

B.V.—Wood pink with darker streaks, close-grained and hard; a cabinet wood.

248.—*P. ODORATA*, *F. v. M.* in *Fragm.*, ix., 185. A small tree, the foliage often glossy. Flowers white; fruit globular or double.—Scrubs of Queensland; also in North Australia and New South Wales.

B.V.—WOOD of a yellow colour, close-grained, tough, and nicely marked; likely to prove useful for cabinet-work.

251.—*P. VACCINIFOLIA*, *J. D. Hook.*; *F. v. M.*, *Fragm.*, ix., 186. A small erect tree with a fluted stem; the leaves very small, almost round. Flowers small, white.—Often met with on the borders of scrubs in South Queensland and New South Wales.

V.—WOOD tough, close in grain, and of a straw colour.

252.—*P. BARBATA*, *J. D. Hook.* *Canthium coprosmoides* in *Flora Austr.*, iii., 423. A tree of medium size, with broadly ovate somewhat glossy leaves with distant veins; the small white flowers in the axils of the leaves, hairy about the throat, the berry-like fruit red.—On the borders of scrubs in Queensland and New South Wales.

B.V.—WOOD dark-yellow streaked with a brown colour, very prettily marked or grained; a useful wood for turnery and cabinet-work.

252a.—*P. BUXIFOLIA*, *Benth.*, *Flora Austr.*, iii., 422. A small tree with deep-green obtuse leaves about 1 inch long. Flowers small, white; berries small.—Range scrubs of Southern Queensland.

B.V.—WOOD of a light colour, close in grain; useful for turnery and cabinet-work.

IXORA, *Linn.*

253.—*I. TIMORENSIS*, *Dcne.* in *Herb. Tim. Descr.*, 90; *Flora Austr.*, iii., 415. A small tree, the leaves oblong, 4 to 8 inches long; those immediately under the inflorescence stalkless and somewhat heart-shaped. Flowers white, in a large spreading panicle at the ends of the branches.—Tropical Queensland and North Australia; Timor and other islands of the Archipelago.

B.V.—WOOD of a light colour, close in grain, hard and tough.

MORINDA, *Linn.*

255.—*M. CITRIFOLIA*, *Linn.*; *DC.*, *Prod.*, iv., 446; *Flora Austr.*, iii., 423. A tall shrub, with 4-angled branches; the leaves large, ovate, 6 to 10 inches long, on short stalks; the flower-heads on short stalks; the fruit a pulpy mass, an inch or more in diameter.—Queensland tropical coast, Tropical Asia, and the Pacific Islands.

B.V.—WOOD of a dark-yellow colour, easy to work; also yields a dye.

255a.—*M. JASMINOIDES*, *A. Cunn.*; *Hook.*, *Bot. Mag.*, t. 3351; *Flora Austr.*, iii., 424. A tall climber, the leaves narrow-ovate, the heads of small flowers on slender stalks. Fruit a globular mass of about 1 inch diameter.—Southern Queensland, New South Wales, and Victoria.

B.V.—WOOD yellow, prettily marked.

CELOSPERMUM, *Blume*.

256.—*C. RETICULATUM*, *Benth.* in *Flora Austr.*, iii., 425. Usually a shrub, but at times forming a tree with crooked stem of 1 foot in diameter, the bark very thick, rough or deeply furrowed, and of a reddish colour. Leaves oval, of a dry nature, and prominently netted. Flowers white, small, the corolla-tube about $\frac{1}{4}$ -inch long, the 4 or 5 lobes small, the flowers hairy inside. Fruit nearly globular, a little over $\frac{1}{4}$ -inch long.—A common plant in Tropical Queensland and North Australia.

B.P.V.—WOOD of a grey colour; the bark, which is often very thick, produces an excellent dye.

Order COMPOSITÆ.

CASSINIA, *R. Br.*

258a.—*C. LEVIS*, *R. Br.* in *Trans. Linn. Soc.*, xii., 128; *Flora Austr.*, iii., 587. Wild Rosemary. A tall shrub with narrow-linear leaves; the branches and under side of the leaves white. Flower-heads white, in short rather dense panicles.—Found frequently in hilly parts of Southern Queensland; also in New South Wales and South Australia.

V.—WOOD dark and beautifully marked, close-grained; would be a very valuable wood cut in veneers for cabinet-work.

Order EPACRIDÆ.

TROCHOCARPA, *R. Br.*

259.—*T. LAURINA*, *R. Br.* in *Prod.*, 548; *Flora Austr.*, iv., 166. A small tree, the bark often stringy; the leaves 1 to 2 inches long clustered at the ends of the branches; the young growth often a pretty purplish colour; nerves of leaves 5 to 7. Flowers small, white, in terminal spikes. Fruit purple, depressed-globular.—Southern Queensland, on the edges of creeks; also in New South Wales.

B.P.V.—WOOD of a pinkish colour, close-grained, nicely marked, and hard.

LEUCOPOGON, *R. Br.*

259a.—*L. MELALEUCOIDES*, *A. Cunn.*; *DC.*, *Prod.*, vii., 750; *Flora Austr.*, iv., 207. A tall shrub, very twiggy; the leaves oblong-linear, with a sharp point, about $\frac{1}{4}$ -inch long. Spike of flowers usually terminal, the flowers small, white.—South Queensland and New South Wales.

B.V.—WOOD of a rather dark colour and nicely marked, hard and close in the grain.

MONOTOCA, *R. Br.*

259b.—*M. SCOPARIA*, *R. Br.* in *Prod.*, 547; *Flora Austr.*, iv., 230. A bushy shrub of several feet; the leaves oblong, pale on the back, about $\frac{1}{4}$ -inch long. Flowers small, white, in clusters. Fruit ovoid, small.—Southern Queensland, New South Wales, Victoria, and Tasmania.

B.P.V.—WOOD of a pale-yellow colour, close-grained, nicely marked, and easily worked.

Order MYRSINÆ.

MYRSINÆ, *Linn.*

260.—*M. VARIABILIS*, *R. Br.* in *Prod.*, 534; *Flora Austr.*, iv., 275. A small tree, the foliage very variable as to shape and size, sometimes bordered by teeth. Flowers small, very numerous along the branches. Fruit a small berry.—Queensland, north and south, often on the sides or tops of ranges; also in New South Wales and Victoria.

B.P.V.—Wood close-grained, light-coloured, and firm.

ÆGICERAS, *Gærtn.*

261.—*Æ. MAJUS*, *Gærtn.*; *A. DC.*, *Prod.*, viii., 142; *Flora Austr.*, iv., 277. River Mangrove. A small tree, leaves thick, very obtuse but tapering into a moderately long stalk, 2 to 4 inches long. The flowers white, in pretty, white, loose bunches at the ends of the branchlets. Fruit a little white curved horn.—On the beach and borders of tidal rivers in Queensland and North Australia; also in the South Pacific Islands, India, and Burmah.

B.V.—Wood of light colour, close-grained, and easily worked.

Order SAPOTACÆ.

CHRYSOPHYLLUM, *Linn.*

262.—*C. PRUNIFERUM*, *F. v. M.* in *Fragm.*, vi., 26; *Flora Austr.*, iv. A small tree, the leaves oblong, woolly on the under side. Flowers in axillary clusters; fruit resembling an Orleans Plum.—Scrubs north and south in Queensland, also in New South Wales.

B.P.V.—Wood of a light-yellow colour, close-grained, hard and tough; might be suitable for bent-work.

LUCUMA, *Juss.*

263.—*L. SERICEA*, *Benth. et Hook.* in *Gen. Pl.*, ii., 654.—A small tree, the branches and under side of the leaves silky. Leaves ovate, 2 or 3 inches long. Flowers in axillary clusters; fruit ovoid, about 1 inch in diameter.—Tropical Queensland, North Australia.

B.P.V.—Wood light-yellow, somewhat resembling Birch, close in the grain and firm; useful in cabinet-work.

SIDEROXYLON, *Linn.*

264.—*S. POHLMANIANUM*, *Benth. et Hook.* in *Gen. Pl.*, ii., 655. A moderate-sized tree, clothed with soft silky hairs. Leaves oblong, 4 or 5 inches long, clustered at the ends of the branches; the flowers clustered on the old wood. Fruit globular.—Common in Queensland river scrubs, north and south.

B.V.—Wood of a bright-yellow, hard and close-grained; the best of all Queensland woods for engraving work.

264a.—*S. LAURIFOLIUM*, *F. v. M.* in *Flora Austr.*, iv., 282. A tall tree with a sweet bark; the leaves oval-oblong, 3 or more inches long. Fruit obovoid.—Maroochie, Queensland.

B.P.V.—Wood light-grey towards the outside, brown in the centre; grain close.

265.—*S. AUSTRALIS*, *Benth. et Hook.* in Gen. Pl., ii., 655. A tall tree, the leaves oblong, 8 or more inches long. Flowers in axillary clusters; fruit purple, ovoid, often nearly 2 inches in diameter.—Queensland scrubs, north and south; also in New South Wales.

B.P.V.—WOOD of a dark colour, close-grained and tough; useful for building purposes.

265a.—*S. OBOVATUM*, *R. Br.*, Prod., 530 (under *Sersalisia*); Flora Austr., iv., 283. Tree of moderate size, the under side of the leaves slightly silky. Leaves 3 to 5 inches long. Fruit oblong, often 1-seeded.—Tropical Queensland.

B.P.V.—WOOD of a yellow colour, hard, and close in the grain.

HORMOGYNE, *A. DC.*

266a.—*H. COTINIFOLIA*, *A. DC.*, Prod., viii., 176; Flora Austr., iv., 284. A small scrub tree, the leaves obovate, and flowers in the axils.—Found on the borders of scrubs, Queensland and New South Wales.

B.P.V.—WOOD of a dark-yellow colour, close in grain and very hard.

MIMUSOPS, *Linn.*

267.—*M. PARVIFOLIA*, *R. Br.*, Prod., 531; Flora Austr., iv., 284. A small tree, the branchlets and young foliage downy. Leaves paler on the under side when full grown, but not white, about 2 inches long. The flowers solitary or in twos in the axils of the leaves.—Tropical Queensland and North Australia.

B.P.V.—WOOD of a pinkish colour, close-grained, firm, and easy to work.

267a.—*M. BROWNIANA*, *Benth.*, Flora Austr., iv., 285. A tree of moderate size, the leaves broad, thick, and white or rusty on the under side. Fruit globular, about 1 inch in diameter.—Tropical Queensland.

B.P.V.—WOOD red, fine-grained, and works easily.

Order EBENACEÆ.

MABA, *Forst.*

268.—*M. FASCICULOSA*, *F. v. M.*, Fragm., v., 163; Flora Austr., iv., 163. An erect tree with smooth dark-coloured bark; the leaves oval-oblong, dark-green, 3 to 5 inches long; the flowers in axillary clusters. Fruit nearly globular, resting in the enlarged cup.—Queensland scrubs; also in New South Wales.

B.V.—WOOD of a light colour, with black specks or streaks, close-grained, strong and elastic; suitable for carving on wood-stamps.

269.—*M. GEMINATA*, *R. Br.*, Prod., 527; Flora Austr., iv., 291. A small tree, the obtuse leaves from 1 to 2 inches long. Fruit in twos or solitary; berries ovoid.—Queensland scrubs; also in North Australia.

B.P.V.—WOOD light-coloured near the outside, black in the centre, close in grain, hard, and tough; the black a good substitute for Ebony.

269a.—*M. HUMILIS*, *B. Br.*, Prod., 527; *Flora Austr.*, iv., 291. A small tree, the branchlets very dense; leaves $\frac{1}{2}$ to 1 inch long, obovate; the fruits often solitary, ovoid.—Queensland coast and mountain scrubs; also in North Australia.

B.P.V.—Wood, the outer part light, the centre black, hard, and very tough; a useful cabinet wood.

DIOSPYROS, *Linn.*

269b.—*D. HEBECARPA*, *A. Cunn.*, *Flora Austr.*, iv., 286. A tree of moderate size. Leaves oval-oblong, showing the netted veins, on short stalks, 2 or 3 inches long. Berry about $\frac{1}{2}$ -inch in diameter, covered with short hairs, containing 8 seeds.—Tropical Queensland coast.

B.P.V.—Wood of a yellow colour, with numerous small black spots, very close in grain and tough.

270a.—*D. PENTAMERA*, *F. v. M.*, *Fragm.*, iv., 82; *Flora Austr.*, iv., 288. A tall erect smooth-barked tree, the leaves oblong, 2 or 3 inches long. Flowers in clusters. The fruits solitary; about $\frac{1}{2}$ -inch in diameter.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—Wood close-grained and very tough.

Order STYRACEÆ.

SYMPLOCOS, *Linn.*

271.—*S. STAWELLII*, *F. v. M.*, *Fragm.*, v., 60. A small tree with usually narrow, irregularly toothed, somewhat dark-green leaves, 2 to 4 inches long. Flowers in spikes. Fruit ovoid.—Queensland scrub borders; also in New South Wales.

B.V.—Wood white, close-grained; suitable for any purpose to which Box is applied.

271a.—*S. THWAITESII*, *F. v. M.*, *Fragm.*, iii., 22; *Flora Austr.*, iv., 293. A small tree with glossy green leaves 4 or 5 inches long. Flowers in spikes, fruit ovoid.—Scrubs north and south in Queensland; also in New South Wales.

B.P.V.—Wood light in colour, fine in grain, and tough.

Order OLEACEÆ.

LINOCIERA, *Sw.*

272.—*L. RAMIFLORA*, *DC.*, Prod., viii., 297; *Flora Austr.*, iv., 301. A tree of moderate size with a light-coloured bark. Leaves 6 to 9 inches long, dotted; the flowers small, white, in loose panicles, often on the shoots below the leaves. Fruit oval, $\frac{1}{2}$ -inch long.—Common in the coast scrubs of Tropical Queensland, New Guinea, Moluccas, and the Philippines.

B.P.V.—Wood dark-grey, somewhat mottled, of close grain, and easy to work.

NOTELEA, *Vent.*

273.—*N. LONGIFOLIA*, *Vent.*, *Choix.*, t. 25; *Flora Austr.*, iv., 299. A small tree with a rough bark and stiff prominently veined body,

2 to 6 inches long; the flowers small in axillary racemes. Fruit ovoid, black and bitter.—Forest country and borders of creeks, Queensland, north and south; also in New South Wales and Victoria.

B.P.V.—Wood of a light colour, hard, tough, and close-grained.

274.—*N. MICROCARPA*, *R. Br.*, Prod., 524; *Flora Austr.* iv., 300. A small tree, the branches slender. Leaves narrow, 2 to 4 inches long, with prominent veins. Flowers very small; fruit small, globular.—Open country, North and South Queensland; also in New South Wales.

B.P.V.—Wood of light colour, dark towards the centre, close-grained and very hard.

OLIVE, *Linn.*

275.—*O. PANICULATA*, *R. Br.*, Prod., 523; *Flora Austr.* iv., 297. Native name (Bunya Mountains), “Billan-billan.” A tall tree, the bark speckled. Leaves pale-green, on long stalks, pointed-oval, 2 to 5 inches long. Flowers small, white, the bunches in the axils of the leaves and at the ends of the shoots. Fruit roundish.—River-side or most Queensland scrubs; also in New South Wales.

B.P.V.—Wood of a whitish colour darkening towards the centre, prettily figured, hard, close-grained, and, when newly cut, of a rose-like fragrance.

CERBERA, *Linn.*

278.—*C. ODOLLAM*, *Gærtn.*; *A. DC.*, Prod., viii., 353; *Flora Austr.* iv., 306. A tall tree with a milky sap, the leaves alternate, tender, narrow, and often nearly 1 foot long, but usually 4 to 6 inches long. Flowers showy, in large terminal panicles, white and yellow, and fragrant. Fruit large.—Coast scrubs of Tropical Queensland, New Guinea, India, and Burmah.

In India the wood does not seem to be used, but from the seeds an oil used for burning is said to be obtained.

B.P.V.—Wood of a dark-yellow, close in the grain, and firm.

ALSTONIA, *R. Br.*

280.—*A. SCHOLARIS*, *R. Br.*; *A. DC.*, Prod., viii., 408. Often a large tree, the bark greyish, the branches whorled like the leaves. Leaves 5 to 7 in each whorl, whitish on the under side, 4 to 6 inches long. Flowers rather small, white, in large spreading terminal panicles. Fruit 2 long, horn-like, narrow pods, containing hairy seeds.—Coast scrubs of Queensland, New Guinea, India, and Burmah; also Tropical Africa.

In India the wood is used for furniture, scabbards, and coffins; in Burmah for school blackboards, and in Assam and Cachar for tea-boxes. Wood and bark bitter.

B.P.V.—Wood soft, close-grained, and of light colour.

281.—*A. VERTICILLOSA*, *F. v. M.*, *Fragm.*, vi., 116; *Flora Austr.* iv., 313. Tree of considerable height, of milky sap. Leaves in whorls of 4 to 7, narrow, and pale on the inner side, and from 3 to 4 inches long; the panicle of flowers bearing more dense clusters than *A. scholaris*.—Tropical coast of Queensland, and North Australia.

B.P.V.—Wood of light colour, soft and easy to work.

281a.—*A. VILLOSA*, *Blume*; *F. v. M.*, *Fragm.*, vi., 117; *Flora Austr.*, iv., 313. A small tree, the branchlets and under side of the leaves velvety. Leaves in whorls of 3, oval-oblong, 4 to 6 inches long. Inflorescence terminal, hoary. Fruit double, horn-like, and narrow, 6 to 12 inches long, containing hairy seeds.—Tropical Queensland and Java.

B.P.V.—WOOD of a light colour, close in grain, works easily, is firm, and would probably suit for staves.

282.—*A. CONSTRICTA*, *F. v. M.*, *Fragm.*, i., 57; *Flora Austr.*, iv., 314. Fever-bark or Quinine-tree. A slender tall tree, with a rough dark bark; the leaves glossy, on long stalks, 3 to 5 inches long. Flowers in loose bunches, small and white. Fruit of 2 narrow horn-like pods, containing hairy seeds.—Common on the inland downs country in Queensland; also in New South Wales.

B.P.V.—WOOD of a pale-yellow, close in the grain; warps in drying.

282a.—*A. CONSTRICTA*, *VAR. MOLLIS*, *Flora Austr.*, iv., 315. Bitter-bark or Fever-bark. An erect slender tree, similar to the last, only velvety.—Common in Queensland on the borders of creeks.

B.P.V.—WOOD white, close-grained; might suit for cabinet-work.

WRIGHTIA, *R. Br.*

284a.—*W. SALIGNA*, *F. v. M.*, *Flora Austr.*, iv., 316. Milk-bush. A tall shrub or small tree with long linear leaves 3 to 5 inches long. Flowers yellow; pods about 6 inches long.—Gulf country; also on the tropical coast in Queensland and North Australia.

B.P.V.—WOOD of a uniform pale-yellow colour, the grain close; might be useful for cabinet-work, carving, and engraving; thought to resemble English Elder.

Order LOGANIACEÆ.

FAGRÆA, *Thunb.*

284b.—*F. MUELLERI*, *Benth.*, *Flora Austr.*, iv., 368. A small tree, the leaves 3 to 6 inches long, oblong, opposite but crowded at the ends of the branches. Flowers few at the top of the shoot; fruit red.—Tropical scrubs, Queensland.

B.P.V.—WOOD of a yellow colour, close-grained and hard.

STRYCHNOS, *Linn.*

286.—*S. PSILOSPERMA*, *F. v. M.*, *Fragm.*, iv., 44; *Flora Austr.*, iv., 369. In Tropical Queensland, a rambling shrub; but on Taylor's Range, near Brisbane, a fine erect small tree of 60 or more feet and armed with slender spines 1 inch long. Leaves broadly ovate, 3 to 5-nerved, 1 to 2 inches long; berry globular.—Taylor's Range, Southern Queensland (a tree), common on the borders of stony scrubs in Tropical Queensland.

B.P.V.—WOOD light-yellow with numerous white longitudinal streaks, the centre black or dark, the grain close; very hard and tough.

Order BORAGINEÆ.

CORDIA, *Linn.*

287.—*C. MYXA*, *Linn.*; *DC.*, *Prod.*, ix., 479; *Flora Austr.*, iv., 386. Sebestan-tree. A moderate-sized tree with a dense head of foliage. Leaves broadly ovate on long stalks, entire or lobed, 3 or 5-nerved at the base, 3 or more inches long, rough to the touch. The flowers rather large in straggling bunches, succeeded by oval drupes of a pale-yellow colour or turning to a pink, very viscid.—In Tropical Queensland, found on the borders of scrubs and sides of rivers; common also in India and Burmah.

In India the wood is considered fairly strong, and is used for boat-building, well-curbs, gun-stocks, and canoes; the bark for rope-making and the fruit for eating.

B.P.V.—WOOD of a light colour, coarse-grained, easy to work, and strong.

EHRETIA, *Linn.*

287a.—*E. ACUMINATA*, *R. Br.*, *Prod.*, 497; *Flora Austr.*, iv., 387. One of the woods called Brown Cedar. A small tree with oval-oblong toothed leaves 3 to 6 inches long. Flowers in panicles, terminal or in the upper axils. Fruit small, globular.—In South Queensland, a creek-side tree; also found in New South Wales and Victoria.

B.P.V.—WOOD light-brown, grain coarse, firm, easy to work; closely resembles English Elm.

Order SOLANACEÆ.

SOLANUM, *Linn.*

289.—*S. VERBASCIFOLIUM*, *Linn.*, *Spec. Pl.*, 184; *Ait.*; *Dun.* in *DC. Prod.*, xiii., part i., 114; *Flora Austr.*, iv., 449. A small tree, densely clothed by a woolly substance, the leaves ovate, 6 to 8 inches long. Flowers white, in dense flat bunches at the ends of the branches, or lateral from the growing out of the shoot. Berries about $\frac{1}{4}$ -inch in diameter, of a yellowish-green.—Queensland scrubs, north and south, also in New South Wales, New Guinea, Tropical Asia, and America.

B.V.—WOOD of a yellow colour, easily worked, of a close grain, and light.

DUBOISIA, *R. Br.*

290.—*D. MYOPOROIDES*, *R. Br.*, *Prod.*, 448; *Flora Austr.*, iv., 474. A small tree with a white corky bark; the leaves narrow-oblong, of a grey colour, 2 to $\frac{1}{2}$ inches long; the flowers in large spreading panicles, very pale-blue or white. Fruit small, globose, black and juicy when ripe.—Borders of scrubs, North and South Queensland; also in New South Wales.

B.V.—WOOD of a light-yellow colour, light and firm, easy to work, useful for cabinet-work; and Mr. Moore in his pamphlet on "The Woods of New South Wales" says it is excellent for carving and wood-engraving. This plant is the source of the mydriatic drug "duboisine," discovered by Dr. Bancroft, of Brisbane.

Order BIGNONIACEÆ.

DIPLANTHERA, *R. Br.*

292.—*D. TETRAPHYLLA*, *R. Br.*, *Prod.*, 449; *Flora Austr.*, iv., 541. A large tree with thick, soft, somewhat corky bark. Leaves usually in fours round the stem, on very short thick stalks, often 2 feet long and 1 foot wide, rough; the flowers in a terminal panicle, yellow, in form like the Foxglove; capsule oblong.—Rockingham Bay and northward in Queensland.

B.V.—Wood of a whitish colour, close-grained and firm. The sample shown is of a small tree.

Order ACANTHACEÆ.

GRAPTOPHYLLUM, *Nees.*

293.—*G. EARLII*, *F. v. M.*, *Fragm.*, vi., 87; *Flora Austr.*, iv., 551. A small slender tree, the leaves oblong-acute, with sometimes a few teeth, 1 to 2 inches long. Flowers a rich reddish purple, the lips incurved, shorter than the tube; capsule about 1 inch long.—Scrubs on the Fitzroy River, Rockhampton.

B.P.V.—Wood flesh-coloured, becoming brown towards the centre, very hard, tough, and close-grained.

Order MYOPORINÆÆ.

MYOPORUM, *Banks et Sol.*

295.—*M. ACUMINATUM*, *R. Br.*, *Prod.*, 515; *Flora Austr.*, v., 3. Native name, "Mee-mee." A small tree having a rough corky bark, a dense head of deep-green foliage, and a pretty star-like flower; the leaves alternate on the stem and from 2 to 3 inches long, narrow and pointed. Flowers white or stained with purple; the small berries purple.—Common in one or other of its forms throughout Australia.

B.P.V.—Wood of a light colour, firm and easily worked.

EREMOPHILA, *R. Br.*

295a.—*E. STURTII*, *R. Br.*, *App. Sturt Exped.*, 22; *Flora Austr.*, v., 21. Scentless Sandalwood. A small tree, the foliage somewhat hoary, viscid, and having a heavy scent. Leaves narrow-linear, 1 or more inches long, with a hook at the point. Flowers from the dried specimens appearing to be white stained with purple, hairy.—Cunnamulla in Queensland, also at inland localities both in South Australia and New South Wales.

B.V.—Wood of a grey colour, hard, close-grained, and nicely marked.

296.—*E. MITCHELLI*, *Benth.* in *Mitch. Trop. Austr.*, 31; *Flora Austr.*, v., 21. Scented Sandalwood. A pretty, round-headed, small tree with dense foliage. Leaves narrow, hooked at the point, 1-nerved. 1 to 2 inches long. Flowers solitary in the axils, the corolla falling and the calyx-segments lengthening out, giving the appearance of a second dry veiny flower. Fruit ovoid.—Found in abundance on the inland downs, Queensland and New South Wales.

B.P.V.—Wood for a short distance in from the bark white, all the rest of a brown colour, hard and close-grained, very fragrant; an excellent wood for cabinet-work.

297.—*E. BIGNONIAEFLORA*, *F. v. M.* in Proc. Roy. Soc. Tasm., iii., 294; *Flora Austr.*, v., 25. A small tree, but the largest of the genus in Queensland; the young growth very viscid. Leaves linear, 3 to 6 inches long. Flowers 1 inch long, enlarging from the base, white and purple. Drupe $\frac{1}{2}$ -inch or more long.—Tropical Queensland, on the borders of scrubs; also in North Australia, New South Wales, and Victoria on the Murray.

B.P.V.—WOOD of a yellowish-brown, close in grain, prettily marked, and fragrant; useful for cabinet-work.

Order VERBENACEÆ.

PREMNA, *Linn.*

298.—*P. OBTUSIFOLIA*, *R. Br.*, Prod., 512; *Flora Austr.*, v., 58. A tall shrub, with broadly ovate leaves 3 to 6 inches long. Flowers in a terminal panicle, white or greenish. Fruits globose, very small.—Tropical coast of Queensland and North Australia.

The form of the pith in the stem of this is most remarkable. The central hollow or pith-tube is ribbed on the inner surface with about 14 prominent and numerous line-like ribs; to these are attached at distances of about 3 lines thin filmy disks or septæ of a pale-pink colour and tough consistency, which may be removed from the stem readily without injury; those of the stem noticed when thus removed measured 8 lines in diameter.

B.V.—WOOD brown.

GMELINA, *Linn.*

298a.—*G. MACROPHYLLA*, *Benth.*, *Flora Austr.*, v., 65. A tall tree, the leaves ovate-oblong, 8 or 10 inches long. Flowers pale-blue, in terminal panicles. Drupe about $\frac{1}{2}$ -inch in diameter.—Tropical scrubs of Queensland and North Australia.

B.P.V.—WOOD close-grained, the outer or sapwood prominently marked, of a pretty purple colour, the rest grey; a useful timber for flooring-boards and planking, the timber closely resembling that of No. 299—the Queensland Beech.

299.—*G. LEICHHARDTII*, *F. v. M.*, *Flora Austr.*, v., 66. Queensland Beech; native name, "Cullonen." A tall tree with grey bark, the leaves rough, oval, 3 to 6 inches long. Flowers white stained with purple, in terminal panicles. Fruit blue, globose or half-globose, 1 inch or more in diameter.—Coast scrubs of Southern Queensland and New South Wales.

B.P.V.—WOOD light-grey, close-grained, extensively used for planking for ships' decks and flooring of verandahs; is not readily attacked by the white ant.

VITEX, *Linn.*

300.—*V. LIGNUM-VITÆ*, *A. Cunn.*; *Schau.* in DC. Prod., xi., 692. *Lignum-vitæ*. A tall tree with a thin bark of a greyish colour, the outer often somewhat loose and fibrous. Leaves oval, 2 to 3 inches long (often lobed on young plants, and on shoots from an old butt). Flowers dingy; fruit rosy-red, size of a cherry, which the fruit much resembles.—Scrubs of Southern Queensland and New South Wales.

B.P.V.—WOOD dark, close in the grain, hard and tough, suitable for cabinet-work.

301.—*V. ACUMINATA*, *R. Br.*, Prod., 512; *Flora Austr.*, v., 67. A large tree with a thin smooth bark, the young growth hoary, the leaves of 3 or sometimes 5 narrow leaflets. Flowers small; drupe globular.—Tropical coast scrubs; also in a few extratropical scrubs north of Brisbane, islands of the Gulf of Carpentaria, and North Australia.

B.P.V.—Wood brown, with darker streaks, close-grained; suitable for cabinet-work.

CLERODENDRON, *Linn.*

302.—*C. TOMENTOSUM*, *R. Br.*, Prod., 510; *Flora Austr.*, v., 62. A small tree, the leaves and young growth more or less velvety. Leaves oval on long stalks, the bunches of bloom terminal; the flower-tubes 1 inch long with the stamens protruding for about another $\frac{1}{2}$ -inch; flowers white. Fruit purple or black, resting in the enlarged calyx-cup.—Most South Queensland scrubs and frequent on hill-sides; also in New South Wales.

B.V.—Wood of a yellow colour, close-grained, light, and easy to work.

AVICENNIA, *Linn.*

303.—*A. OFFICINALIS*, *Linn.*; *Schau.* in DC. Prod., x., 700; *Flora Austr.*, v., 69. White Mangrove; native name, "Tchoenchee." A small tree with a smooth bark and greyish-green foliage. Leaves ovate, 2 to 4 inches long, rather thick and often blistered, the under side silky. Flowers small; the fruit resembling a broad bean seed.—Great quantities may be seen at the water's edge of tidal rivers, Queensland sea-coast; and also a common sea-coast tree of Asia, Africa, and America.

B.P.V.—Wood strong, tough, hard, and durable; useful for many purposes.

Order NYCTAGINEÆ.

PISONIA, *Linn.*

304.—*P. BRUNONIANA*, *Endl.*, Prod. Fl. Norf., 43; *Flora Austr.*, v., 280. A large tree with obovate or oblong leaves, 8 or more inches long, of a somewhat leathery consistence. Fruit with 5 tuberculate angles.—Tropical coast scrubs and river-sides; also in New South Wales, New Guinea, New Zealand, and Norfolk Island.

B.P.V.—Wood soft and light, of a light colour.

Order PHYTOLACCACEÆ.

CODONOCARPUS, *A. Cunn.*

304a.—*C. AUSTRALIS*, *A. Cunn.*, Herb.; *Moq.* in DC. Prod., xiii., ii., 39; *Flora Austr.*, v., 148. Bell-fruit. A small tree, the bark smooth, branches slender, leaves tapering into long narrow points, bright-green. Fruit pear-shaped, separating at maturity into thin wing-like seeds.—Found on ranges and also on the islands along the coast of Southern Queensland; also in New South Wales.

B.P.V.—Wood soft and spongy and of a light colour.

Order PIPERACEÆ.

PIPER, *Linn.*

305.—*P. NOVÆ-HOLLANDIÆ*, *Miq.* in *Medd. Akad. Netensk.* Amsterd., ser. 2, ii.; *Flora Austr.*, vi., 204. Native Pepper-vine. A climber with stems often a foot in diameter, the younger stems adhering to the stems of trees like Ivy. Leaves deep-green, heart-shaped, on very short stalks, 3 or 4 inches long and nerved. Berries red, ovoid.—A common scrub-climber in Queensland and New South Wales.

The ethereal spirituous extract of the wood yields crystals, the nature of which have not been ascertained.

B.V.—Wood coarse-grained, and pungently scented when newly cut.

Order MYRISTICÆÆ.

MYRISTICA, *Linn.*

306.—*M. INSIPIDA*, *B. Br.*, *Prod.*, 400; *Flora Austr.*, v., 281. Native Nutmeg. A moderate-sized tree, the young shoots often rusty. Leaves oval, the under side of a light colour, 4 to 6 inches long, the veins prominent. Fruit oval, about 1 inch long.—Tropical Queensland scrubs; also in North Australia.

B.V.—Wood of a pinkish-grey colour, tough and easily worked.

Order MONIMIACEÆ.

MOLLINEDIA, *Ruiz et Pavon.*

307.—*M. LOXOCARYA*, *Benth.*, *Flora Austr.*, v., 286.—A small tree, the branches somewhat compressed under the leaves. Leaves elliptical-oblong, 4 or 5 inches long, of a leathery consistence, on rather long stalks; the fruiting panicle only about 2 inches long, the drupes stalkless, ovoid.—Scrubs of Tropical Queensland.

B.V.—Wood yellowish, close in grain, and prettily marked.

KIBARA, *Endl.*

308.—*K. LONGIPES*, *Benth.* in *Flora Austr.*, v., 289. Tree of medium size, with oval, glossy, more or less toothed leaves, 4 to 8 inches long. Drupes ovoid, $\frac{1}{4}$ -inch long.—Tropical Queensland.

B.V.—Wood straw-coloured, close in grain, hard, and nicely marked.

DAPHNANDRA, *Benth.*

308a.—*D. AROMATICA*, *Bail.* in *Suppl. to Syn. Ql. Fl.* Tree of moderate size, the bark like Sassafras, and with rather stiff fragrant leaves, 3 or 4 inches long. The fruiting perianth-tube black, about 1 inch long, in very short panicles. Carpels densely hairy, with light-brown glossy hairs.—Johnstone River scrubs.

It is with some diffidence that this plant is placed under *Daphnandra*, for although the fruit agrees with that genus, the aromatic fragrance and want of the poisonous principle found by Dr. Bancroft in both the other species would almost warrant placing it under *Atherosperma*.

B.P.V.—Wood of a light colour, not unlike pine wood, for which it would form a substitute.

309.—*D. MICRANTHA*, *Benth.*, *Flora Austr.*, v., 285. A tall handsome tree with smooth bark, the young growth often much flattened at the joints. Leaves opposite, petiolate, oval or oblong, the margins bordered by blunt teeth 2 to 4 inches long and deep-green. Flower-panicle about as long as the leaves. Fruiting perianth-tube about 1 inch long; carpels hairy with glossy-brown hairs.—Scrub tree of Southern Queensland and New South Wales.

B.P.V.—Wood of a greyish colour (only a small tree cut for this exhibit); might prove suitable for carving.

309a.—*D. REPANDULA*, *F. v. M.*, *Fragm.*, x., 105. A tree of moderate size, with rather thin leaves, the margins wavy, 4 to 6 inches long; the flowers fringed, in straggling bunches. Fruit about 1 inch long, the seeds hairy.—Scrubs of Tropical Queensland.

Dr. T. L. Bancroft has found in the bark of this and *D. micrantha* an active poisonous principle, which is not found in *D. aromatica*.

B.P.V.—Wood of a light colour, nicely figured, grain close; probably it might serve for engraving. It closely resembles English Holly.

Order LAURINEÆ.

CRYPTOCARYA, *R. Br.*

310.—*C. MURRAYI*, *F. v. M.*, *Fragm.*, v., 170; *Flora Austr.*, v., 295. A large tree, the young shoots hairy, leaves oval, 6 to 10 inches long, of a light colour on the under side, except the veins which are rusty. Fruit ovoid or globular, shining.—Scrubs of Tropical Queensland.

B.P.V.—Wood of a dark colour, hard and close-grained.

311.—*C. OBOVATA*, *R. Br.*, *Prod.*, 402; *Flora Austr.*, v., 296. A tall tree with a thin greyish scented bark, the young shoots and leaves covered with rusty hairs. Leaves oblong, 2 to 4 inches long; fruit globular, about $\frac{1}{2}$ -inch diameter.—Queensland scrubs, north and south; also in New South Wales.

B.P.V.—Wood of a light colour, very tough.

312.—*C. GLAUCESCENS*, *R. Br.*, *Prod.*, 402; *Flora Austr.*, v., 297. A tall tree, usually without hairs, but sometimes the leaf-stalks slightly hairy. Leaves oval, green on both sides, or slightly white beneath in some forms. Fruit depressed-globular, $\frac{1}{2}$ -inch or more in diameter. — One or other form of this tree met with in most Queensland scrubs; also in North Australia and New South Wales.

B.P.V.—Wood of a light colour, easily worked, and likely to prove useful for many purposes.

313.—*C. TRIPLINERVIS*, *R. Br.* in *Prod.*, 402; *Flora Austr.*, v., 297. A tall tree with dark-green foliage, hairy on the under side, the leaves 3 or 4 inches long, the 3 nerves starting from above the base. Panicles of flowers hoary, dense. Fruit oval, nearly $\frac{1}{2}$ -inch long.—Common in Queensland scrubs; also in New South Wales.

B.P.V.—Wood of a grey colour, close in the grain, tough.

313a.—*C. CINNAMOMIFOLIA*, *Benth.* in *Flora Austr.*, v., 298. Variety with small leaves. A moderate-sized tree with a deep-green foliage, the leaves about 2 inches long, ovate and 3-nerved. Fruit black, globular.—Mount Mistake Range, South Queensland.

B.P.V.—WOOD of fine grain, easy to work, of a light colour.

314.—*C. AUSTRALIS*, *Benth.*, *Flora Austr.*, v., 229. Queensland Laurel. Usually a small tree or large shrub, with rather narrow, bright, glossy leaves, paler on the under side, one of the lateral veins diverging from the midrib on either side and running parallel with it to the point of the leaf. Flowers greenish, rather small. Fruit about 1 inch in diameter, rather red or pale-yellow.—Frequent in Queensland scrubs; also in the northern parts of New South Wales.

B.P.V.—WOOD light-coloured, close-grained, easily worked; suitable for lining-boards.

BEILSCHMIEDIA, *Nees.*

315.—*B. OBTUSIFOLIA*, *Benth. et Hook.* in *Gen. Pl.*, iii., 1521. Sassafras-tree. A tall tree with light-coloured fragrant bark and foliage. Leaves oblong, rather narrow, 4 or more inches long. Flowers in a terminal panicle.—Scrubs, north and south, in Queensland; also in New South Wales.

This contains a tannin similar or identical with cinchona tannin; the amount, $7\frac{1}{2}$ per cent. One ton of the dry bark yields 770 oz. of oil.—*K. T. Staiger.*

B.P.V.—WOOD pale-coloured, close in grain, firm, easy to work; suitable for joiner's work.

ENDIANDRA, *R. Br.*

316.—*E. GLAUCA*, *R. Br.*, *Prod.*, 402; *Flora Austr.*, v., 300. A small tree with a thin, hard, smooth bark, the young shoots and inflorescence clothed with a rusty coating of hairs. Leaves oblong, pointed, 3 to 5 inches long, white on the under side. Fruit black, oval, over $\frac{1}{4}$ -inch long.—Scrubs of Tropical Queensland.

B.V.—WOOD light-coloured, close-grained, hard and tough.

317.—*E. SIEBERI*, *Nees.*, *Sys. Laurin.*, 194; *Flora Austr.*, v., 301. Native name at Moreton Bay, "Till." A tree of moderate size, the leaves oblong, 3 or 4 inches long, green on both sides, showing the netted veins very plainly. Fruit oval, about 1 inch long.—South Queensland scrubs, also in New South Wales.

B.P.V.—WOOD grey or light-brown, close in the grain; suitable for tool-handles.

317a.—*E. VIRENS*, *F. v. M.*, *Fragm.*, ii., 90. A tree of medium size. Leaves oblong, 3 or 4 inches long, or at times more. Fruit black, shiny, and globular, $\frac{1}{2}$ to 1 inch in diameter.—Often met with on the margins of creeks in South Queensland and New South Wales.

B.P.V.—WOOD of a grey colour, close-grained and firm; useful for many purposes.

CINNAMOMUM, *Burm.*

318.—*C. TAMALA*, *Th. Nees.*, Sys. Laurin., 56; *Flora Austr.*, v., 303. Native Cinnamon. A large tree with a smooth fragrant bark. Leaves ovate, usually opposite, 3 to 6 inches long, the 3 longitudinal nerves starting from above the base.—Scrubs of Tropical Queensland; also in India and Burmah.

In India the bark is said to be collected and sold under the name of "Taj," and the leaves under the name of "Tezpat, tajpat."

B.P.V.—WOOD of a grey colour, close-grained, firm, and strongly scented.

LITSEA, *Lam.*

320.—*L. DEALBATA*, *Nees.*, Sys. Laurin., 630; Var. *rufa*, Benth., *Flora Austr.*, v., 308. A moderate-sized tree, the young parts clothed with reddish hairs. Leaves oval, 3 to 6 inches long, white on the under side; the flowers in close bunches along the branchlets. Fruit globose, purple, about $\frac{1}{2}$ -inch in diameter.—Frequently met with in the South Queensland scrubs; also in New South Wales.

B.P.V.—WOOD of a yellowish colour, with numerous short brown longitudinal streaks; tough and close-grained.

321a.—*L. FERRUGINEA*, *Benth.* in B. and H. Gen. Pl., iii., 161. A tree of moderate size, clothed with rusty short hairs. Leaves 3 to 6 inches long, rusty on the under side where the veins are raised. Fruit oval.—Scrubs of Tropical Queensland.

B.P.V.—WOOD pale-yellow, light, close-grained, and easily marked.

322.—*L. RETICULATA*, *Benth.* in B. and H. Gen. Pl., iii., 161. "Cudgerie" of Bunya Mountains. A large tree with dark-green foliage; the leaves oblong, 3 or 4 inches long, green on both sides.—Bunya Mountains in South Queensland; also in the tropical scrubs.

B.P.V.—WOOD of a grey colour, close grain, light and easy to work, suitable for flooring-boards.

HERNANDIA, *Linn.*

324.—*H. BIVALVIS*, *Benth.*, *Flora Austr.*, v., 314. "Cudgerie" or Grease-nut. A tall tree with a smooth bark. Leaves glossy-green, ovate to nearly heart-shaped, peltate on young plants when the plants have thick fleshy roots. Flowers in terminal panicles, fragrant, often in threes, the central flower being female. Fruit a black ribbed nut, surrounded by 2 red fleshy leaves, giving the appearance of a large bell-pepper.—Scrubs of South Queensland.

The shells of the fruit of this tree contain a dye, soluble in soda but not in ether, alcohol, or water. The kernel contains 64·8 per cent. of oil, which is similar to common laurel oil, is of the same consistency, and also the same stearine and narcotic smell.—*K. T. Staiger.*

B.P.V.—WOOD of a dark-grey colour, grain close, light and soft; suitable for carriage-brakes, lining-boards, and similar uses.

Order PROTEACEÆ.

PERSOONIA, *Sm.*

325.—*P. FALCATA*, *R. Br.* in Trans. Linn. Soc., x., 162, and Prod., 373; *Flora Austr.*, v., 385. Native names on the Mitchell, "Nanchee" and "Booral." A small tree, the young shoots silky. Leaves curved, narrow, 3 to 8 inches long. Flowers axillary, but forming leafy racemes by the abortion of the leaves.—Tropical Queensland and North Australia.

B.P.V.—Wood light with a reddish centre, hard and close-grained.

326.—*P. MEDIA*, *R. Br.*, Prot. Nov., 16; *Flora Austr.*, v., 391. Geebong; native name, "Koombarra." A small tree with silky foliage; the leaves almost elliptical, the point acute, 2 to 4 inches long. Flowers axillary, yellow. Fruit oval, $\frac{1}{2}$ to nearly 1 inch long.—In open coast country, South Queensland and New South Wales.

B.V.—Wood of a light colour, close in grain and firm; might prove useful for tool-handles. It somewhat resembles the English Beech, and may prove as serviceable to musical instrument makers.

MACADAMIA, *F. v. M.*

328.—*M. TERNIFOLIA*, *F. v. M.* in Trans. Phil. Inst. Vict., ii., 72; *Flora Austr.*, v., 406. Queensland Nut. A tall tree, the foliage dense and dark-green. Leaves in whorls of 3 or 4, usually about 4 or 6 inches long, and bordered by sharp teeth. Flowers white, in long racemes. Fruit globose, often more than 1 inch in diameter, containing a smooth globose nut, or sometimes 2 half-round nuts.—Scrubs of South Queensland and New South Wales.

B.P.V.—Wood of a red colour, close-grained, firm, and prettily marked; will doubtless become a favourite wood with the cabinet-makers.

XYLOMELUM, *Sm.*

329.—*X. PYRIFORME*, *Knight*, Prot., 105; *Flora Austr.*, v., 408. Wooden Pear. A small tree, the young shoots rusty-hairy. Leaves prominently veined, narrow-oval, 4 to 6 inches long on some of the branches, armed with prickly teeth. Flowers in woolly spikes. Fruit pear-shaped, opening in 2 woody valves. Seeds flat with a long wing.—Open country, South Queensland and New South Wales.

B.P.V.—Wood dark-red, coarse-grained, prettily figured; suitable for cabinet-work.

330.—*X. SALICINUM*, *A. Cunn.* in *R. Br. Prot. Nov.*, 31; *Flora Austr.*, v., 408. Wooden Pear. A small tree, the foliage silky; the leaves elliptical, marked by a few undulate prickly teeth, 3 to 5 inches long, and narrower than the last. Flower-spikes 3 to 5 inches long. Fruit as in the last species, only not so velvety and usually narrower.—Various parts of Queensland, but frequent on the coast.

B.P.V.—Wood of a dark-red colour, close in grain, tough, and durable.

HELICIA, Lour.

331a.—*H. FERRUGINEA*, VAR. A small tree, the branches more or less rusty as well as the inflorescence. Leaves near the flowers, lanceolate, about 8 inches long and 2 wide; veins prominent. Flower-racemes 4 or 5 inches long; flowers white.—Johnstone River.

B.P.V.—Wood of a pinkish colour, nicely marked, close-grained; will be useful to coopers as well as cabinet-makers.

ORITES, R. Br.

332.—*O. EXCELSA*, *R. Br.*, Prot. Nov., 82; Flora Austr., v., 411. Sometimes called Silky Oak. A tall tree, leaves on the flowering branches narrow, entire or slightly toothed, 4 to 6 inches long, netted-veined, grey on the under side. Flower-spikes axillary; fruit about 1 inch long, containing flat-winged seeds.—Ranges of South Queensland (Mount Mistake Range); also in New South Wales.

B.P.V.—Wood of a grey colour, close-grained, hard, and durable.

KERMADECIA, Brongn.

332a.—*K. PINNATIFIDA* (sp. nov.). A handsome erect tree of medium size, the smaller branches angular and velvety with rusty-brown hairs. Leaves alternate, entire or pinnatifid, those on barren shoots or young trees often exceeding 18 inches in length, and divided, almost to the midrib, into from 2 to 4 pairs of opposite, long, narrow-linear, attenuated, and somewhat approximate lobes, seldom over 1 inch broad, with or without a terminal odd lobe, the base decurrent on the petiole; colour grey on the upper surface, bright rusty-brown beneath, prominently reticulate, the lateral primary veins joining and forming a regular intramarginal one far in from the margin; leaves on old tree or the flowering branches usually entire, about 6 inches long and lanceolate on rather long petioles. Inflorescence silky-white in a panicle, the raceme-like branches 3 to 5 inches long, bearing pedicellate flowers scattered, solitary or in clusters of 2 or more. Bracts linear, 2 or 3 lines long, very deciduous. Perianth silky, glabrous inside, about 3 or 4 lines long, the segments very narrow, and limb globose; ovary stipitate, glabrous; style filiform, stigma somewhat dilated, hypogynous glands broad.—Johnstone River.

Only a few flowers and no fruit seen.

B.P.V.—Wood of a pinkish colour, close in grain, and very prettily marked; useful to coopers and cabinet-makers.

GREVILLEA, R. Br.

335a.—*G. POLYSTACHYA*, *R. Br.* in Trans. Linn. Soc., x., 177; Prod., 380; Flora Austr., v., 459. A small tree, the branchlets silky, the leaves linear, undivided or irregularly into linear segments, 6 inches long, the leaf often being 1 foot long, all silky-white. Flowers in racemes, forming a terminal panicle, pale-yellow.—Tropical Queensland and North Australia.

B.P.V.—Wood red, hard, close-grained, and durable, prettily marked; suitable for cabinet-work.

336.—*G. ROBUSTA*, *A. Cunn.* in *R. Br. Prot. Nov.*, 24; *Flora Austr.*, v., 459. Silky Oak; native name, "Tuggan-tuggan." A tall slender tree with a rugged bark, the leaves divided so as to resemble a fern-frond, the entire leaf from 6 to 12 inches long and nearly as broad. Flowers orange-coloured.—South Queensland and New South Wales.

B.P.V.—Wood of a light-pinkish colour, grain close, prettily marked; used for staves and in cabinet-work.

337.—*G. STRIATA*, *R. Br.* in *Trans. Linn. Soc.*, x., 177; *Prod.*, 380; *Flora Austr.*, v., 462. Beefwood. A slender-branched small tree, with a dark rugged bark and silky-white foliage. The leaves strap-like, 6 to 18 inches long and under $\frac{3}{4}$ -inch wide, with from 2 to 12 raised parallel nerves. Flowers in short spikes.—A tree frequently met with in open country, both in the interior and on the coast of Tropical Queensland; not so common in the more southern parts of the country. Also an interior tree in New South Wales and South Australia.

B.P.V.—Wood dark-brown, prettily marked, strong, close-grained; useful for staves and cabinet-work.

339.—*G. GIBBOSA*, *R. Br.* in *Trans. Linn. Soc.*, x., 177; *Prod.*, 380; *Flora Austr.*, v., 463. A small tree, the foliage clothed with white, silky, short hairs. Leaves narrow, tapering towards both ends, 4 or 5 inches long. Flowers small in a dense spike-like raceme. Fruit nearly globular, woody, 1 to $1\frac{1}{4}$ inch in diameter, containing 1 or 2 very thin winged seeds.

B.P.V.—Wood dark-brown, prettily marked, close-grained and hard; of a greasy nature which prevents it showing well when polished.

HAKEA, *Schrad.*

341a.—*H. PEDUNCULATA*, *F. v. M.* in *Melb. Chem.*, July, 1883. A small tree with dark-coloured rugged bark, and oblong obtuse leaves of 2 or 3 inches in length.—Endeavour River, Queensland.

B.V.—Wood dark-brown, close in the grain, nicely marked, and hard.

CARNARVONIA, *F. v. M.*

342.—*C. ARALIFOLIA*, *F. v. M.*, *Fragm.*, vi., 81, t. 55, 56; *Flora Austr.*, v., 410. A moderate-sized tree, with Umbrella-tree-like leaves; leaflets 3 to 5 on the end of a rather long stalk, some of the leaflets again divided; the capsules incurved, pointed, $1\frac{1}{2}$ inch long, thin; seeds winged.—Tropical Queensland scrubs.

B.P.V.—Wood of a red colour, firm, and fine-grained; useful for coopers' and cabinet-makers' work.

DARLINGIA, *F. v. M.*

344.—*D. SPECTATISSIMA*, *F. v. M.*, *Fragm.*, v., 152; *Flora Austr.*, v., 533. A moderate-sized tree. Leaves oblong, entire or lobed, the whole leaf sometimes 18 inches long. Racemes of flowers numerous in the upper axils of the leaves. Capsule $1\frac{1}{2}$ to 2 inches long; seeds oblong.—Tropical Queensland.

B.P.V.—Wood of a light-brown colour, nicely marked, light and firm; a useful wood for both cooper and cabinet-maker.

CARDWELLIA, *F. v. M.*

345.—*C. SUBLIMIS*, *F. v. M.*, *Fragm.*, v., 24; *Flora Austr.*, v., 538. Gold Spangle-wood. A large tree, the young growth rusty-hoary. Leaves of 4 to 10 oblong leaflets, 3 to 8 inches long. Inflorescence a terminal panicle of several racemes, the flowers hoary. Fruit 3 or more inches long, $1\frac{1}{4}$ broad; seed about 3 inches long, $\frac{1}{4}$ -inch broad.—Scrubs of Tropical Queensland.

L.P.V.—Wood of a light colour, prettily marked; suitable for cabinet-work.

STENOCARPUS, *R. Br.*

346.—*S. SINUATUS*, *Endl.*, *Gen. Pl. Suppl.*, iv., 88; *Flora Austr.*, v., 539. Tulip-flower. A tall handsome tree with glossy foliage; the leaves on young plants often over a foot long and of several more or less spreading lobes, but usually undivided, and not over 6 inches long on the adult trees. Flowers in large bunches, scarlet. Fruit spindle-shaped; towards the lower part full of closely packed winged seeds.—Scrubs of South Queensland and New South Wales.

B.P.V.—Wood of a light colour, close in grain, tough and firm; suitable for cabinet-work, or any work in which English Beech is employed, which this resembles.

347.—*S. SALIGNUS*, *R. Br.*, *Trans. Linn. Soc.*, x., 202; *Prod.*, 391; *Flora Austr.*, v., 539. One of the woods called Silky Oak. A graceful tree of erect growth, the leaves in some forms lobed, but mostly narrow, 4 or more inches long, 1 or more inches broad; bunches of flowers in the upper axils. Fruit narrow and several inches long, closely packed with winged seeds.—South Queensland ranges or coast; also in New South Wales.

B.P.V.—Wood of a red colour, hard, close-grained, and nicely marked; useful for the finer kinds of coopers' work and cabinet-work.

BANKSIA, *Linn. f.*

348.—*B. INTEGRIFOLIA*, *Linn. f.*, *Suppl.*, 127; *Flora Austr.*, v., 554. Honeysuckle; native name, "Pomera." Flowering as a shrub, but attaining a good size in some localities; the bark rough and corky. Leaves very variable in shape, some very long, narrow, and quite entire, others sharply toothed, but generally white on the under side. Flowers greenish-white, or with a yellowish tinge. Cone 3 to 6 inches long and 1 to 2 inches in diameter.—Common in most parts of Queensland, New South Wales, and Victoria.

B.P.V.—Wood pinkish, close in the grain, and nicely marked; used for shoemakers' lasts, cabinet-work, and in boat-building.

349.—*B. DENTATA*, *Linn. f.*, *Suppl.*, 127; *Flora Austr.*, v., 555. A small tree, the bark rough. Leaves white on the under side, 4 to 8 inches long; the edges sharply toothed, broad at the top, and from thence tapering towards the base. The flower-spike and fruit longer, but closely resembling those of *B. integrifolia*.—Coast of Tropical Queensland and New Guinea.

B.V.—Wood of a dark-red colour, hard, close-grained, and prettily marked.

351.—*B. ÆMULA*, *R. Br.* in Trans. Linn. Soc., x., 210; Prod., 395; Flora Austr., v., 557. A small tree; but the stem of this, *B. integrifolia*, and *B. dentata* often attain a diameter of 1 or 2 feet. Flower-spike oblong, the flowers with a yellowish-green tinge; cones very large.—Islands of Moreton Bay, also in New South Wales, and Gippsland in Victoria.

B.P.V.—Wood deep-red, coarse-grained, prettily marked, shrinks unequally in drying; an excellent wood for the cabinet-maker.

Order THYMELEACEÆ.

WIKSTROEMIA, *Endl.*

351a.—*W. INDICA*, *C. A. Meyer* in Bull. Acad. Sc. Petersh., i. (1843), 357; Flora Austr., vi., 37. A tall shrub, with slender often silky branches, the bark very tough. Leaves ovate, 1 or 2 inches long. Flowers few together, yellowish-green, little tubes with short holes at the top; fruit an oval reddish berry.—Common on the borders of scrubs in Queensland; also in North Australia and New South Wales; extending to the Indian Archipelago and China.

V.—Wood of a yellowish colour, soft and close-grained.

Order SANTALACEÆ.

SANTALUM, *Linn.*

353.—*S. LANCEOLATUM*, *R. Br.*, Prod., 356; Flora Austr., vi., 214. Name on Cloncurry, "Tharra-gibberah." A small slender tree, the branches often drooping. Leaves oblong, 2 or 3 inches long. Flowers yellowish. Fruit globular with a circular scar below the summit.—Met with in all parts of Queensland; also in New South Wales, North, South, and West Australia.

B.P.V.—Wood of a bright-yellow colour, close in grain, firm; useful for cabinet-work.

EXOCARPUS, *Labill.*

355.—*E. LATIFOLIA*, *R. Br.*, Prod., 356; Flora Austr., vi., 228. Scrub Sandalwood or Broad-leaved Cherry. A tall tree with an erect trunk, the bark brown and slightly fibrous. Leaves ovate, stiff, 1 or 2 inches long, often very obtuse, with several nerves diverging from the base. Fruit ovoid, on a red fruity stalk.—Coast and river scrubs of Queensland, North Australia, New South Wales, New Guinea, the Eastern Archipelago, and Philippine Islands.

B.P.V.—Wood fragrant, dark-coloured, coarse in grain, and hard; useful in cabinet-work.

356.—*E. CUPRESSIFORMIS*, *Labill.*, Voy., i., 155, t. 14; Flora Austr., vi., 229. Cypress Cherry; native name, "Tchimmi-dillen." A small tree resembling a Cypress or *Arbor-vitæ*, the branches drooping. Flowers minute. Fruit globular, on a short pedicel, which after fecundation enlarges, becomes red and succulent, and is eaten under the name of cherry in the southern colonies.—The tree is met with in all parts of Australia, except perhaps in the North.

B.P.V.—Wood of a pinkish-grey colour, soft, close-grained and light.

Order EUPHORBIACEÆ.

RICINOCARPUS, *Desf.*

357.—*R. PINIFOLIUS*, *Desf.* in *Mem. Mus. Par.*, iii., 459, t. 22; *Flora Austr.*, vi., 70. Flowering as a small shrub, but attaining in some localities the height of 30 feet. Leaves crowded, linear, giving the plant a pine-like appearance. Flowers showy, terminal, white. Fruit like small castor-oil fruits.—Islands of Moreton Bay; also in New South Wales, Victoria, and Tasmania.

B.V.—Wood light-coloured, soft, close in the grain, and works easily.

BRIDELIA, *Willd.*

358.—*B. EXALTATA*, *F. v. M.*, *Fragm.*, iii., 32; *Flora Austr.*, vi., 119. A tree of moderate size, with a somewhat scaly bark, the leaves long-ovate, often obtuse, 2 to 5 inches long, often grey on the under side. Fruits globose, shiny-brown, and somewhat succulent.—Southern Queensland and New South Wales.

B.P.V.—Wood of a dark-drab colour, hard and close in the grain; somewhat resembling Walnut, and as suitable for cabinet-work.

358a.—*B. FAGINA*, *F. v. M.* in *Flora Austr.*, vi., 120. A small tree, the branches and under side of the leaves sometimes hoary. Leaves ovate, 1 to 2 inches long. Fruit globular, small.—Queensland, north and south.

B.P.V.—Wood greyish-brown, mottled and becoming darker towards the centre; an easily-worked wood; suitable for cabinet-makers.

CLEISTANTHUS, *J. D. Hook.*

359.—*C. CUNNINGHAMII*, *Muell. Arg.* in *DC. Prod.*, xv., ii., 506; *Flora Austr.*, 122. A small tree with very dense head of rather rough foliage. Leaves oval-oblong, 1 to 2 inches long, pale on the under side, rather rough. Flowers minute. Fruit depressed-globular, 3-lobed, hairy at an early stage.—Common on the borders of scrubs throughout Queensland; also in New South Wales.

B.V.—Wood hard, close-grained, and light colour.

PHYLLANTHUS, *Linn.*

361.—*P. FERDINANDI*, *Muell. Arg.* in *Flora*, 1865, 379, and in *DC. Prod.*, xvii., 300; *Flora Austr.*, vi., 96. Native name, "Towwar." A moderate-sized tree, with lively green foliage, the branchlets often reddish. Leaves oval-oblong, usually 3 or 4 inches long, but at times much longer. Flowers in the axils, or some distance up the stem towards the next leaf, very irregular even on the same tree in this respect. Fruit depressed-globular, $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter.—Along creek-sides throughout Queensland; also in North Australia and New South Wales.

B.P.V.—Wood easy to work, close in the grain, and of a grey colour; warps a good deal in drying.

BREYNIA, *Forst.*

362.—*B. OBLONGIFOLIA*, *Muell. Arg.* in *DC. Prod.*, xv., ii., 440; *Flora Austr.*, vi., 114. A small graceful tree, with a grey-green foliage, the leaves oblong and about 1 inch long. Fruit globular, red.—A common creek-side small tree in Queensland, also in New South Wales.

V.—Wood straw-coloured, close-grained, and firm.

PETALOSTIGMA, *F. v. M.*

363.—*P. QUADRILOCULARE*, *F. v. M.* in Hook. Kew Journ., ix., 17; Flora Austr., vi., 92. Emu Apple, Crab-tree, or Bitter-bark; native name, "Muntenpin." A small round-headed tree, the shoots and under side of the leaves more or less silky. Leaves oblong or almost round, the upper side often glossy, $\frac{1}{2}$ to 1 inch long. Fruit orange colour, about $\frac{1}{4}$ -inch or more in diameter, splitting to pieces when ripe, the seeds like small castor-oil beans. A very common tree in open country in Queensland; also in North Australia and New South Wales.

B.P.V.—Wood dark-brown, hard and close-grained, shrinks much in drying; resembling in some degree the English Laburnum.

HEMICYCLIA, *Wight et Arn.*

365.—*H. AUSTRALASICA*, *Muell. Arg.* in DC. Prod., xv., ii., 487; Flora Austr., vi., 118. A tree of moderate size, the leaves 2 or 3 inches long; the lower ones, or those on young plants, bordered by teeth, holly-like, the upper ones entire. Fruit oval, red, about $\frac{1}{4}$ -inch long, somewhat succulent.—River scrubs, Queensland, north and south; also at the Clarence River, New South Wales.

B.V.—Wood yellow when fresh, changing to a greyish-yellow when dry; grain close, tough and hard.

DISSILIARIA, *F. v. M.*

366.—*D. BALOGHIOIDES*, *F. v. M.* in Baill. Adans., vii., 359; Flora Austr., vi., 90. Native name, "Currungul." A tall tree with somewhat thin glossy leaves 2 to 5 inches long, oblong and opposite. Fruit about 1 inch in diameter, splitting to pieces when ripe; seeds oval, shining.—A common tree of South Queensland scrubs.

B.P.V.—Wood hard, close-grained, brown, becoming darker towards the centre of the tree; might be used for any purpose to which the English Apple is put, which this wood is thought to resemble.

ALEURITES, *Forst.*

368.—*A. MOLUCCANA*, *Willd.*; *Muell. Arg.* in DC. Prod., xv., ii., 723; Flora Austr., vi., 128. Candle-nut. A tall tree with a wide-spreading head, the foliage and young shoots covered by a mealy substance. The leaves on young plants 3 or more lobed, entire and ovate-rhomboidal on large trees. Flowers in broad terminal panicles; the fruit 2 inches or more in diameter, seed or nut nearly globular, several in each fruit.—Scrubs of Tropical Queensland, and New Guinea; spread over the Eastern Archipelago and the islands of the South Pacific.

The oil of the nuts of this tree is known in commerce as Candle-nut or country walnut oil. Mr. Staiger found the nuts to consist of the following:—The dry nuts—shell, 70 per cent.; kernel, 30 per cent. Kernel freed from shell—oil, 54·3 per cent.; amylaceous and nitrogenous substance, 45·7 per cent. This latter gives 10 $\frac{1}{2}$ per cent. ashes rich in phosphoric acid.

B.P.V.—Wood of a light colour, soft and light; if cut when full of sap liable to decay, as in the case of the sample shown.

CROTON, *Linn.*

369.—*C. INSULARIS*, *Baill.*, *Adans.*, ii., 217; *Flora Austr.*, vi., 124. Queensland Cascarilla Bark. A small round-headed tree when growing in open country, but in the scrubs a tall erect tree of scanty foliage. Bark rough, fragrant, the leaves ovate, 2 to 4 inches long, and with the young shoots silvery, of a red colour when dying off. Flower-racemes 3 to 5 inches long. Capsules 3-lobed, about $\frac{1}{4}$ -inch in diameter.—Common in Queensland, north and south.

B.P.V.—Wood of a yellow colour, close-grained, hard, and very tough.

370.—*C. PHEBALIODES*, *F. v. M.*, *Flora Austr.*, vi., 125. A tree with strongly-scented thin grey bark and erect growth, like *C. insularis*; also in its silvery appearance; but the leaves are much narrower and more pointed, about 2 inches long. Flower-racemes numerous, capsules hairy and rough, about $\frac{1}{4}$ -inch in diameter.—Often found in range and river scrubs of North and South Queensland; also in New South Wales.

B.V.—Wood yellow, close-grained and tough.

370a.—*C. PHEBALIODES*, *F. v. M.* Var. *hirsuta*. An erect tree, the young shoots and leaves covered with longish hairs. Leaves oblong, 4 or more inches long, differing from the normal form in the larger foliage which is much more hairy, and in the less silvery appearance.—Found in the scrubs of Taylor's Range, near Brisbane, Queensland.

B.P.V.—Wood of a yellow colour, close in the grain, hard and tough.

371.—*C. VERREAUXII*, *Baill.*, *Etud. Euph.*, 357; *Flora Austr.*, vi., 126. A small tree with oblong, narrow, green leaves, turning red or orange before falling, 3 to 5 inches long, entire or toothed, not fragrant as those of *C. insularis*. Racemes of flowers numerous. Capsules nearly globular.—A common creek-side shrub or tree in Queensland; also in North Australia and New South Wales.

B.V.—Wood of a yellowish colour, close-grained, and firm.

BALOGHIA, *Endl.*

373.—*B. LUCIDA*, *Endl.*, *Prod. Fl. Norf.*, 84; *Flora Austr.*, vi., 148. Scrub Bloodwood. A large tree, the stem often knotted, and the rough bark stained by the red sap which flows from the least wound. Leaves opposite, deep-green, oblong, 3 to 5 inches long, often glossy. Flowers white, very fragrant; capsule with blunt prickles, over $\frac{1}{4}$ -inch in diameter.—Queensland, north and south, but most abundant in range scrubs; also in New South Wales, Norfolk Island, and New Caledonia.

B.P.V.—Wood of a light-yellow, prettily marked, close in the grain, hard and tough; a useful cabinet-wood; might probably prove suitable for engraving.

CLAOXYLON, *A. Juss.*

375.—*C. AUSTRALE*, *Baill.*, *Etud. Euph.*, 493; *Flora Austr.*, vi., 130. A small tree of straggling growth, more or less covered by a mealy down; the leaves oblong, 3 to 6 inches long, and green on both

sides, the texture tender, pointed, and the margins toothed. Flowers in short spikes in the axils of the leaves, small, greenish; the capsules about $\frac{1}{4}$ -inch broad.—Common in Queensland scrubs, north and south; also in New South Wales.

B.V.—Wood of a light-yellow colour, hard and close-grained; useful for cabinet-work.

MALLOTUS, *Lour.*

378.—*M. CLAOXYLOIDES*, *Muell. Arg.* in *Linnæa*, xxxiv., 192; *Flora Austr.*, vi., 140. A small tree, the rough foliage emitting a strong and rather disagreeable odour. Leaves opposite, the pairs unequal as to size, oval or oblong, 3 to 6 inches long, more or less distinctly 3-nerved. Flowers greenish, the sexes in different bunches. Capsule something like a castor-oil capsule.—A common tree in Queensland scrubs; also in New South Wales.

B.P.V.—Wood of a bright-yellow colour, close-grained; useful for cabinet-work.

379.—*M. PHILIPPINENSIS*, *Muell. Arg.* in *Linnæa*, xxxiv., 196; *Flora Austr.*, vi., 141. Kamela-tree; native name, "Poodgee-poodgera." A small tree, the inflorescence and foliage more or less rusty. Leaves on long stalks, oval, pale on the under side, often 3-nerved, 3 to 6 inches long; capsules covered by a red mealy substance.—Common in open country throughout Queensland; also in New South Wales, New Guinea, Tropical Asia, and South China.

In India the bark is used for tanning, and the red powder surrounding the ripe capsules is used for dyeing silk. As a purgative and anthelmintic, this red substance is known as "kamela," and is soluble in alcohol but not in water—amount, $3\frac{1}{2}$ per cent.; the bark of the roots contains a similar dye.

B.P.V.—Wood close-grained, hard, and very tough, of a light straw colour.

379a.—*M. POLYADENUS*, *F. v. M.*, *Fragm.*, vi., 184; *Flora Austr.*, vi., 142.—A small tree, the leaves oblong, covered on the under side with minute glands, 3 to 6 inches long. Capsule with the same scale-like glands as the rest of the plant.—Tropical Queensland.

B.P.V.—Wood light-yellow outside, changing towards the centre to a brown, close in grain and hard; suitable for mallets, chisel-handles, &c.

380a.—*M. DISCOLOR*, *F. v. M.*, *Flora Austr.*, vi., 143. A tall tree with light-coloured bark. The leaves on rather long stalks, ovate, about 3 inches long, 3-nerved, white on the under side. The capsules about $\frac{1}{4}$ -inch in diameter, covered with a light-yellow mealy substance.—Scrubs of South Queensland; also in New South Wales.

The capsules of this give a bright-yellow dye.

B.P.V.—Wood light-yellow, close in the grain, and tough.

MACARANGA, *Thou.*

380b.—*M. INAMENA*, *F. v. M.*, *Flora Austr.*, vi., 145. A small tree, the foliage rough. Leaves oblong, green on both sides, 3 to 5 inches long, on stalk of about 1 inch. Flower in spike of 4 or 5 inches; capsules 2 or 3-celled, somewhat prickly.—Tropical Queensland coast scrubs.

B.V.—Wood of a light colour, tough and close-grained.

380c.—*M. INVOLUCRATA*, *Baill.*, *Etud. Euph.*, 432; *Flora Austr.*, vi., 146. Tree, the branches, inflorescence, and under side of the leaves covered by a mealy substance. Leaves broadly ovate. Flower-spikes in axillary panicles; the flowers in dense clusters within a heart-shaped small leaf. Capsule globular, covered by soft processes.—Tropical Queensland.

B.V.—WOOD very light and soft; might be found serviceable for making splints.

381.—*M. TANARIUS*, *Muell. Arg.* in *DC. Prod.*, xv., ii., 997; *Flora Austr.*, vi., 146. Native name, "Tumkullum." A small tree, the shoots whitish. Leaves very large, almost orbicular, attached to the stalk far in from the margin; nerves about 9, radiating from the top of the stalk; capsule covered with blunt prickles.—A common sea-coast shrub or tree in Queensland; also in New South Wales, North Australia, India and the Archipelago, and China.

B.V.—WOOD of a light colour, soft and close-grained.

HOMALANTHUS, *A. Juss.*

381a.—*H. POPULIFOLIUS*, *Grah.* in *Bot. Mag.*, t. 2780; *F. v. M.*, *Fragm.*, i., 32. A small tree with smooth grey foliage, the leaves on long stalks, ovate-triangular, turning red when about to fall; racemes of flowers 4 or 5 inches long; capsules smooth.—Borders of Queensland scrubs; also in New South Wales and Victoria, the Eastern Archipelago, and Islands of the Pacific, at which latter Baron Mueller states it is poisonous to stock.

B.V.—WOOD soft, of a light colour.

EXCÆCARIA, *Linn.*

382.—*E. AGALLOCHA*, *Linn.*; *Muell. Arg.* in *DC. Prod.*, xv., ii., 1220; *Flora Austr.*, vi., 152. Milky Mangrove or River Poison-tree. Tree of moderate size with a yellowish free foliage and smooth bark, the sap milky. Leaves oblong, somewhat fleshy, 2 or 3 inches long; spikes of flowers (male) 3 or 4 inches long, of an orange colour; the female flower in much shorter spikes; capsules about $\frac{1}{2}$ -inch in diameter.—Common all around the coast and up tidal rivers in Queensland and North Australia; also in New South Wales, and is a tropical maritime tree of Asia.

In India the wood is considered useful for general carpentering purposes.

At some excavations being carried out on the banks of the Brisbane River for the new Gasworks, the workmen have come, at a depth of some 20 to 30 feet, upon large masses of fossilised leaves and wood. Many of the leaves and much of the wood have doubtless belonged to trees of this common coast swamp tree.

B.P.V.—WOOD of a light colour and soft, close in the grain, and easy to work.

383.—*E. DALLACHYANA*, *Baill.*, *Adans.*, vi., 324; *Flora Austr.*, vi., 153. Scrub Poison-tree. A small tree with a dark-green foliage and milky sap; the leaves 1 to 3 inches long, bluntly toothed; capsules 3-lobed, about $\frac{1}{4}$ -inch diameter.—A common scrub tree in Queensland, both north and south.

B.P.V.—WOOD yellow with black heart, close in the grain and very tough; might be found suitable for axe-handles.

384.—*E. PARVIFOLIA*, *Muell. Arg.* in *Flora*, 1864, 433, and *DC. Prod.*, xvii., 1221; *Flora Austr.*, vi., 153. Gutta-percha tree or "Jil-leer." A small tree with narrow-oblong leaves $\frac{1}{2}$ to 1 inch long. Male racemes of flowers $\frac{1}{2}$ to 1 inch long.—Gulf country in Queensland; also in North Australia.

B.P.V.—Wood near the outside yellow, the heart dark and very beautifully marked, close-grained and easily worked; an excellent wood for the cabinet-maker.

Order URTICACEÆ.

CELTIS, *Linn.*

384a.—*C. PHILIPPINENSIS*, *Blanco.*, *Fl. Philip.*, 197; *Flora Austr.*, vi., 156. A small tree with broadly ovate rigid leaves, 2 or 3 inches long, 3-nerved. Drupes oval.—Scrubs of the Tropical Queensland coast, extending over the Archipelago to South China.

B.V.—Wood light-coloured, hard, and close-grained.

TREMA, *Lour.*

385.—*T. ASPERA*, *Blume*, *Mus. Bot.*, ii., 58; *Flora Austr.*, vi., 158. Peach-leaf Poison-bush. A small tree with a smooth bark, the leaves narrow-ovate and often very rough, 2 to 4 inches long, 3-nerved. The flowers in little bunches at the axils of the leaves, very small, succeeded by little round black berries.—Very common around the Queensland scrubs, and fully believed to be poisonous to stock; also met with in New South Wales and North Australia.

B.V.—Wood of a whitish colour, soft and light.

385a.—*T. ORIENTALIS*, *Blume*, *Mus. Bot.*, ii., 62; *Flora Austr.*, vi., 158. Charcoal-tree of India. Usually of larger growth, and having the under side of the leaves of a light colour, otherwise resembling *T. aspera*.—Found plentifully in the north but sparingly in the south of Queensland, and at Parramatta in New South Wales; widely spread in East India and the Archipelago.

In parts of India this tree is allowed to grow for shade in coffee plantations. The wood is used for making gunpowder charcoal.

B.P.V.—Wood of a red colour, soft, and resembling Cedar.

APHANANTHE, *Planch.*

386.—*A. PHILIPPINENSIS*, *Planch.* in *Ann. Sc. Not.*, ser. 3, x., 337; *Flora Austr.*, vi., 160. A small tree with dense foliage; the leaves rough and bordered by sharp distant teeth, 1 to 3 inches long, ovate, or, when long, narrow. Fruit ovoid, about $\frac{1}{2}$ -inch long.—Riversides and the borders of scrubs throughout the coast country of Queensland; also in New South Wales and the Philippine Islands.

B.V.—Wood close-grained, light in colour; might do for stamps.

PSEUDOMORUS, *Bureau.*

388.—*P. BRUNONIANA*, *Bureau* in *Ann. Sc. Nat.*, ser. 5, xi., 372; *Flora Austr.*, vi., 181. A small tree with a close dense foliage, the leaves narrow-ovate, 1 to 4 inches long, toothed, very rough; the

female flowers in very short heads, but the male in drooping spikes over 1 inch long. Berries white, sweet-flavoured.—Borders of scrubs and margins of rivers, both north and south in Queensland and New South Wales, extending to Norfolk Island and New Caledonia.

B.V.—Wood light-yellow, close-grained, hard and tough.

FICUS, *Linn.*

389.—F. CUNNINGHAMII, *Miq.* in *Ann. Mus. Lugd. Bot.*, iii., 286; *Flora Austr.*, vi., 165. A large tree, often but not always shedding its leaves in winter. Leaves glossy, light-green, oval-oblong, abruptly pointed, 4 to nearly 6 inches long and 2 or more inches broad; the primary veins distant and prominent. Fruit at first white, but turning to a pretty purple, globose, $\frac{1}{2}$ -inch or rather more in diameter, close in pairs in the axils of the leaves.—South and North in Queensland.

B.P.V.—Wood of a light colour, soft and porous.

390.—F. PLATYPODA, *A. Cunn.* Var. *petiolaris*, *Flora Austr.*, vi., 169. A moderate-sized tree, the leaves glossy, deep-green, on somewhat flattened rather long stalks, 4 inches long or more and about 2 inches or more broad. Fruit on short stalks, globular.—North and South Queensland.

B.V.—Wood soft, of a light-yellow colour, with a strong fibre.

392.—F. ASPERA, *Forst.*, *Prod.*, 76; *Flora Austr.*, vi., 174. Rough or Purple Fig. Tree of moderate size, dark-coloured bark and very rough foliage. The fruit when ripe dark-purple.—Scrubs of South Queensland, very common, and New South Wales.

B.V.—Wood yellow-coloured, close-grained.

394a.—F. PLEUROCARPA, *F. v. M.*, *Fragm.*, viii., 246; *Bail.*, *Syn. Ql. Fl.*, 490. Johnstone River Ribbed Fig. A tree of moderate size, the leaves oval, pointed, 3 to 5 inches long, about 2 inches broad. Fruit ribbed, 2 inches or more long, somewhat conical.—Johnstone River, Queensland.

B.P.V.—Wood light, soft, and elastic, with very open pores.

395.—F. GLOMERATA, *Willd.*, *Spec. Pl.*, iv., 1148; *Flora Austr.*, 178. A large spreading-headed tree, the foliage slightly hairy and light in colour. Leaves narrow-ovate, pointed, 2 to 6 inches long, with distant veins. Fruit large, in bunches on the trunk of the tree and thick branches.—North and South Queensland; also North Australia and India.

In India the wood is used for well-frames, as it is found, though soft, to last well under water.

B.P.V.—Wood of a straw colour, coarse in grain, light, soft, and porous.

CUDRANIA, *Trécul.*

396.—C. JAVANENSIS, *Tréc.* in *Ann. Sc. Nat.*, ser. 3, viii., 123; *Flora Austr.*, vi., 179. Cockspur Thorn. A tall rambling shrub with a thick stem; bark corky, yellow, the stems armed with spines

about 1 inch long, often curved. Leaves oblong, 1 to 3 inches long; the ripe fruit like a round yellow mulberry.—Common on the borders of scrubs in North and South Queensland; also in New South Wales, Java, Burmah, and India.

B.P.V.—Wood dark-yellow, close-grained; a desirable cabinet-wood.

LAPORTEA, *Gaudich.*

397.—*L. GIGAS*, *Wedd.*, Monogr. Urt., 129, t. 3 and 4, and in DC. Prod., xvi., i., 82; Flora Austr., vi., 191. Large Stinging-tree. A very large tree, trunk 4 or 5 feet or even more in diameter, with a height of over 100 feet, the bark grey; the leaves large, somewhat heart-shaped, and over 1 foot in diameter, covered with soft hairs; the bunches of inflorescence with the pedicels enlarged and fleshy when the fruit comes to maturity.—Scrubs, South Queensland and New South Wales.

It may here be noticed that the pain caused by the sting of these plants may be instantly relieved by the milky juice of the lower part of the stem of *Colocasia macrorrhiza*—"Cunjevoi" of the natives—being rubbed on the affected part.

B.P.V.—Wood spongy, brownish, soft.

398.—*L. PHOTINIPHYLLA*, *Wedd.*, Monogr. Urt., 138, and in DC. Prod., xvi., i., 83; Flora Austr., vi., 192. Shiny-leaved Stinging-tree. A large tree with a soft grey bark. The leaves green and shining, ovate, 8-nerved, 4 to 6 inches long; the ripe nuts with their fleshy stalks forming a white fleshy mass.—Queensland scrubs, north and south; also in New South Wales.

B.P.V.—Wood very soft, brownish.

PIPTURUS, *Wedd.*

400.—*P. ARGENTEUS*, *Wedd.* in DC. Prod., xvi., i., 235; Flora Austr., 185. Native name, "Coomeroo-coomeroo." A small tree, the branches and under side of the leaves hoary-white. Leaves on long often pink stalks, ovate, pointed, 3 or 5-nerved, the edges slightly toothed, 3 to 6 inches long. Fruit small, white, edible.—Found in most Queensland coast scrubs; also in New South Wales, the Indian Archipelago, and Pacific Islands.

B.V.—Wood brown, close-grained, and soft. The bark yields good fibre.

Order CASUARINEÆ.

CASUARINA, *Linn.*

401.—*C. GLAUCA*, *Sieb.* in Spreng. Syst., iii., 803; Flora Austr., vi., 196. Swamp Oak; native name, "Billa." A moderate-sized tree with a rough bark, the shoots greyish, sheath-teeth pointed, usually 10 to 12. Male spikes about 1 inch long. Cones subglobose, flat-topped, about $\frac{1}{4}$ -inch in diameter.—Found on the margins of rivers in Queensland, New South Wales, Victoria, and South Australia.

B.P.V.—Wood of a red colour, beautifully marked, close in grain, hard and tough; useful in cabinet-work; used for shingles and staves.

401a.—*C. EQUISETIFOLIA*, *Forst.*, *Char. Gen.*, 103, t. 52; *Flora Austr.*, vi., 197. Tree of moderate size, with drooping branches of a greyish colour; bark rough, sheath-teeth usually about 7, but varying from 6 to 8; male spikes about 1 inch long; cones almost globular, about $\frac{1}{2}$ -inch in diameter, velvety.—Tropical Queensland coast, North Australia, New Guinea, East India, and the Archipelago.

This is one of the woods largely planted in India.

B.V.—WOOD of a dark colour, coarse-grained, but nicely marked.

402.—*C. EQUISETIFOLIA*, *Forst.* *Var. incana*, *Flora Austr.*, vi., 197. Native name, "Wunna-wunnarumpa." Tree of moderate size, the young shoots woolly or hoary, and drooping; cones nearly 1 inch in diameter.—Found on the islands of the Queensland coast.

B.P.V.—WOOD light-brown, prettily marked, close-grained and very tough.

403.—*C. SUBEROSA*, *Ott. et Dietr.*; *Miq.*, *Rev. Cas.*, 54, t. 6, and *DC. Prod.*, xvii., ii., 337; *Flora Austr.*, vi., 197. Often a tall tree, the bark rough but not corky; the sheath-teeth 7 or from 6 to 8; the male spikes slender, several inches long, of a reddish colour. Cones oblong, often flat at each end, and over 1 inch long.—Open country north and south in Queensland, often in forests almost entirely confined to themselves; also in New South Wales, Victoria, and Tasmania.

B.P.V.—WOOD dark-brown, prettily marked, coarse in grain, hard, and tough; used for bullock-yokes and hurdles.

404.—*C. CUNNINGHAMIANA*, *Miq.*, *Rev. Cas.*, 56, t. 6, and in *DC. Prod.*, xvi., ii., 335; *Flora Austr.*, vi., 198. A tall tree with slender branches, sheath-teeth as in *C. suberosa*. Cones under $\frac{1}{2}$ -inch long, nearly globular.—River-sides, often at inland localities in Queensland; also in New South Wales.

B.P.V.—WOOD of a dark colour, close-grained, and prettily marked.

405.—*C. INOPHLOIA*, *F. v. M. et Bail.*, *Melb. Chem.*, 1882; *Bail.*, *Syn. Ql. Fl.*, 495. Thready-barked Oak. A small tree with a curious bark, loose, and composed of long, flat, thread-like scales; branches slender; sheath-teeth 7 to 9, acute; male spikes reddish or purplish, long and slender, the cones about 1 inch in diameter, of irregular shape.—Found on sandy poor land inland, but on both sides of the coast range in Queensland.

B.P.V.—WOOD very beautiful, of a reddish colour, but with numerous dark marks, the grain close; a very desirable wood for cabinet-work.

406.—*C. TORULOSA*, *Ait.*, *Hort. Kew.*, iii., 320; *Flora Austr.*, vi., 200. Forest Oak. Native name, "Koondeeba." A tree of moderate size, the bark corky, and the branches drooping and very slender; sheath-teeth 4 or perhaps 5; male spike slender, and long cones, globular or oblong, velvety, over 1 inch in diameter.—A common tree on ranges in Queensland; also in New South Wales and South Australia.

B.P.V.—WOOD of a red colour, very nicely marked, close in the grain and hard; used for bullock-yokes.

Subclass GYMNOSPERMEÆ.

Order CONIFERÆ.

CALLITRIS, *Vent.*

407.—*C. PARLATOREI*, *F. v. M.* in Seemann. Journ. Bot., 267, Fragm., v., 186, and Flora Austr., vi., 235. Stringybark Pine. An erect tree of moderate size, the bark very stringy. Cones pyramidal, over 6 inches long, 6-valved.—On ranges of Southern Queensland and New South Wales.

B.P.V.—Wood fragrant, of a light straw colour, close-grained, soft, and easily worked; suitable for cabinet-work or joinery.

408.—*C. ROBUSTA*, *R. Br.* A tall tree of a grey colour, the cones globular, valves alternately smaller.—An inland Pine of Queensland and all the other Australian colonies.

B.P.V.—Wood fragrant, varies much as to colour from a light to a dark brown, with often pinkish longitudinal streaks, often full of beautiful markings, very durable; in use for piles and sheathing of boats, as it resists to a great degree the attacks of the teredo; an excellent cabinet-wood.

408a.—*C. ROBUSTA*, *R. Br.* Var. *microcarpa*, Flora Austr., vi., 237. Native name at Brisbane, "Pooragri"; at Wide Bay, "Coolooli." A coast pine, head very dense and dark-green. Cones globose, $\frac{1}{2}$ -inch or more in diameter. Valves very unequal, with the central columella more than usually developed.—On the Queensland coast, and also New South Wales.

B.P.V.—Wood of a dark colour, close-grained, fragrant and durable; used for piles of wharves, sheathing of boats, resisting attacks of the teredo; also an excellent cabinet-wood.

408c.—*C. RHOMBOIDEA*, *R. Br.* in Rich. Conif., 47, t. 18; Flora Austr., vi., 238. Native name, "Brorogery." Tree of medium size with slender drooping branches; the cones clustered; valves 6, alternately smaller, the larger ones dilated at the top, with a little point near the centre.—Islands of Moreton Bay, Queensland; also in New South Wales, Victoria, and South Australia.

B.P.V.—Wood of a light colour, close-grained and durable; uses same as the last.

408d.—*C. CALCARATA*, *R. Br.* in Mem. du Mas. Par., xiii., 74; Flora Austr., vi., 238. A small tree, branches drooping and angular. Cones clustered, about $\frac{1}{2}$ -inch in diameter; valves 6, somewhat smooth, and the larger ones little or not dilated upwards, the cone furrowed at the junctions before it opens.—Various parts of Queensland, New South Wales, and Victoria.

B.P.V.—Wood of a light colour, fine in the grain and prettily marked; a useful wood for joinery as well as cabinet-making.

PODOCARPUS, *L'Her.*

409.—*P. ELATA*, *R. Br.*; *Mirb.* in Mem. Mus. Par., xiii., 75; Flora Austr., vi., 247. She-Pine; native name, "Kidneywallum." A tall erect tree, with a thin somewhat stringy bark and long linear

glossy-green leaves from 2 to 6 inches long; male spikes 1 inch or more long, often 2 or 3 together. Fruit oval, resting upon a purple fleshy foot; sometimes this fleshy part is over 1 inch in diameter.—A common tree of coast scrubs in Queensland and New South Wales.

B.P.V.—Wood of a light-yellow colour, close in the grain, strong and durable; used for piles and boat-sheathing, as it fairly resists the attacks of the teredo; excellent for spars and masts of vessels.

AGATHIS, *Salisb.*

410.—*A. ROBUSTA*, *C. Moore* (under *Dammara*) in Trans. Pharm. Soc. Vic., ii., 174; Flora Austr., vi., 244. Dundathu Pine or Kauri Pine. A tall tree with the branches in whorls. Leaves of a deep-green colour, ovate, 2 to 5 inches long, and from 1 to over 2 inches broad. Cone smooth, oblong.—Queensland coast country; usually on ranges.

B.P.V.—Wood of a light-yellow colour, close-grained, soft, and easy to work; largely used by joiners and cabinet-makers.

ARAUCARIA, *Juss.*

411.—*A. CUNNINGHAMII*, *Ait.* in Sweet's Hort. Brit., 475; Flora Austr., vi., 243. Moreton Bay or Hoop Pine. Native name at Brisbane, "Cumburtu"; Wide Bay, "Coonam." A tall tree, the branches in whorls; leaves narrow, needle-like. Male spikes cylindrical, 2 or 3 inches long. Cones ovoid, 4 or more inches in length and 2 or more in diameter.—Coast ranges, north and south; also in New South Wales.

B.P.V.—Wood straw-coloured, strong and durable, used extensively for flooring and lining boards in house-building, also by the cabinet-makers. This wood is often very prettily marked; it is said that it lasts well for bottoms of punts when kept constantly wet.

412.—*A. BIDWILLI*, *Hook.*, Lond. Journ. Bot., ii., 503, t. 18; Flora Austr., vi., 243. Bunya Pine. A fine glossy-green large tree, the branches in whorls. Leaves lance-shaped, 1 inch or more long. Male spikes 3 or 4 inches long. Cones very large. Seeds 2 inches long; at one time largely used by the natives for food.—On the Bunya Range, and Condamine, Dawson, and Burnett Rivers.

B.P.V.—Wood light in colour, often very prettily marked, is strong, durable, and easily worked; in use by joiners and cabinet-makers for various kinds of work.

Order CYCADACEÆ.

CYCAS, *Linn.*

413.—*C. MEDIA*, *E. Br.*, Prod., 348; Flora Austr., vi., 249. A fern-like small tree, trunk 8 or more feet high, with a crown of pinnate leaves, each leaflet with a prominent midrib. Male flower in a cone covered by a mealy substance; the fruit on broad, notched, abortive leaves. Seeds oval, about 1½ inch long, yellowish.—Tropical Queensland and North Australia.

B.V.—Wood or outer part stringy, the centre of stem spongy.

Class II.—MONOCOTYLEDONS.

Order LILIACEÆ.

DRACÆNA, *Linn.*

414b.—*D. ANGUSTIFOLIA*, *Roxb.*; *Baker* in Journ. Linn. Soc., xiv., 526; *Flora Austr.*, vii., 20. A tall shrub or small slender tree, the stem marked by rings, scars of fallen leaves; the leaves crowning the head of the stem, long and narrow with fine points. Flower-panicle a foot or more long and but little branched, flowers white. Fruit rather pulpy, containing from 1 to 3 rather large seeds.—Tropical Queensland and North Australia; also New Guinea.

B.P.V.—WOOD, or the outer hard portions of the stem, of a light colour, the rest very soft and spongy.

Order JUNCACEÆ.

XANTHORRHÆA, *Sm.*

414a.—*X. ARBOREA*, *R. Br.*, Prod., 288; *Flora Austr.*, vii., 115. Grass-tree or Blackboy. Trunk 10 or more feet high, often thick-coated by the bases of old leaves. Leaves forming a dense crown to the stem, long, narrow, grass-like. Flower-spike several feet long, flowers white, seeds black.—Found on rocky or sandy poor land in Queensland and New South Wales.

Often burned by bushmen to drive away mosquitoes.

B.P.V.—WOOD, or outer hard part of stem, straw-coloured, cross-grained. The centre of the stem contains 5 per cent. of sugar; the outer part of stem yields the scaroid gums of commerce, which form a polish by merely being dissolved in spirits.

Order PALMÆ.

ARCHONTOPHÆNIX, *Wendl. et Drude.*

418.—*A. CUNNINGHAMII*, *W. et D.* in *Linnæa*, xxxix., 214; *Flora Austr.*, vii., 141. Native name, "Piccabeen." A tall slender tree, the leaves pinnate, leaflets green on both sides, tapering towards the point, where it is at times toothed. Flowers in large bunches. Fruit ovoid-globose.—Common in many parts of South Queensland, and some places in the tropics; also in New South Wales.

B.P.V.—WOOD or outer part of stem very hard and prettily marked.

PTYCHOSPERMA, *Labill.*

419.—*P. NORMANBYI*, *F. v. M.*, *Fragm.*, viii., 235, xi., 56; *Bail.*, Syn. Ql. Fl., 564. Black Palm. A tall tree, dense head of leaves, stem very hard and dark. Leaves 6 to 8 feet long, with long sheathing-bases; the stem stout and covered with white mealy hairs, furnished with leaflets to the base, each leaflet divided to the base into usually 9 narrow lobes, 1 to 1½ foot long, which are toothed at the end; the nerves

numerous and prominent, the under side white. Fruit ovoid, with conical points $1\frac{1}{2}$ inch long.—Country about the Daintree River, Queensland.

B.P.V.—Wood, or outer part of the stem, very hard and black, beautifully marked; used in the manufacture of walking-sticks.

LICUALA, *Rumph.*

420.—*L. MUELLERI*, *Wendl. et Drude* in *Linnaea*, xxxix., 223; *Flora Austr.*, vii., 145. The most beautiful palm of Australia, with erect very tall stem, not plainly scarred by fallen leaves. Leaves almost like a round fan divided into wedge-shaped portions with large saw-like teeth at the end. At an early stage these portions are more or less joined for several inches at the top, but they are always free from each other at the base, where they join the stalk. The leaves 3 to 6 or more feet in diameter; stalks furnished near the base with short sharp prickles, below which the margins expand into an entire, strong, lace-like sheath, which ends on the opposite side of the stem in a long, entire, thin, narrow, strap-like point. This peculiar development at the leaf's base forms a bulb-like mass above the clear part of the stem. Fruit crimson, in large straggling bunches, ovoid or globular, about $\frac{1}{4}$ or $\frac{1}{2}$ inch in diameter.—Found at Rockingham Bay and Johnstone River, in Queensland.

B.V.—Wood, or the outer hard part of stem, hard, and marked with narrow black lines.

LIVISTONA, *R. Br.*

420a.—*L. HUMILIS*, *R. Br.*, *Prod.*, 268; *Flora Austr.*, vii., 146. A small tree with crown of palmate leaves; leaves with a radius of $1\frac{1}{2}$ foot, deeply divided into narrow plaited segments tapering to a fine point, with a thread-like bristle between the lobes, the stalk flattened and prickly on the edges; berry ovoid-oblong, in large bunches.—Gulf country, Queensland; and many parts of North Australia.

B.P.V.—Wood, or the outer hard portion of stem, hard and of a light colour, the inner soft.

420b.—*L. INERMIS*, *R. Br.*, *Prod.*, 268; *Flora Austr.*, vii., 146. A small tree with crown of palmate leaves, the stalks slender, without prickles on the edges, or only 1 or so very small ones near the top.—Rockingham Bay, Queensland.

B.P.V.—Wood, or outer part of stem, of a light-grey, streaked by a darker colour.

421.—*L. AUSTRALIS*, *Mart.*, *Hist. Nat. Palm.*, iii., 241; *Flora Austr.*, vii., 146. Common Cabbage Palm. A tall tree with stout stem and large crown of palmate leaves, 5 or more feet in diameter, the segments cleft at the top into 2 narrow lobes; panicle large. Fruit globose, often nearly 1 inch in diameter.—Coast country from Rockhampton to the southern border in Queensland; also in New South Wales and Victoria.

Formerly the leaves of this palm were largely used in hat-making, the cabbage-tree hats being generally worn.

B.P.V.—Wood, or outer part of the stem, moderately hard, of a light colour.

Order PANDANEÆ.

PANDANUS, *Linn.*

422.—*P. PEDUNCULATUS*, *R. Br.*, Prod., 341; *Flora Austr.*, vii., 149. Breadfruit; native name, "Wynnum." Tree of moderate size, emitting strong roots from the stem, several feet from the soil. The leaves several feet long, tapering to a long narrow point, the edges with small sharp prickly teeth. Fruit a large globose head, composed of clusters of drupes which are about 2 inches long.—A sea-side tree, all around the Queensland coast; also in New South Wales.

B.V.—WOOD, or the firm outer part of the stem, of a light colour, and prettily marked. Aërial roots and leaves supply good fibre.

Class III.—ACOTYLEDONS.

Order FILICES.

ALSOPHILA, *R. Br.*

424.—*A. AUSTRALIS*, *R. Br.*, Prod., 158; *Flora Austr.*, vii., 710. Common Tree Fern; native name, "Nanga-nanga." A tall tree with stout stem and fine crown of fronds, each 6 to 10 feet long and several feet broad, the stalk often covered by long thin whitish scales.—Found in many parts of Queensland, New South Wales, Victoria, and Tasmania.

B.P.V.—WOOD, or the hard outer part of the stem, brown and white in streaks, the brown very hard.

425.—*A. LEICHHARDTIANA*, *F. v. M.*, *Fragm.*, v., 53, 117; *Flora Austr.*, vii., 711. Prickly Tree Fern. Stem tall, dark, hard, and often free from the bases of old fronds. Fronds 4 to 7 feet long, the stalk prickly with sharp black prickles.—Common, north and south in Queensland; also in New South Wales.

B.V.—WOOD, or outer hard portion of stem, black with white streaks, the black very hard.

DICKSONIA, *L'Her.*

427.—*D. YOUNGLE*, *C. Moore* in Baker's Syn. Filic., 461; *Flora Austr.*, vii., 713. A tall stout Tree Fern, the crown of the stem and bases of the fronds clothed with long, bright, brown, hairy scales; fronds long and broad.—Bunya Mountains and high ranges in Queensland; also in New South Wales.

B.V.—WOOD, or outer part of the stem, black streaked with white, the dark very hard.

Group VIIIc.]

[Classes 53—58.

QUEENSLAND MINERALS.



CATALOGUE OF THE MINERALS

EXHIBITED IN THE

QUEENSLAND COURT,

COLONIAL AND INDIAN EXHIBITION OF 1886;

**WITH ABBREVIATED NOTES ON THE VARIOUS MINERAL FIELDS,
EXTRACTED FROM THE ANNUAL REPORTS OF THE
DEPARTMENT OF MINES AND THE REPORTS OF
THE GOVERNMENT GEOLOGISTS AND OTHER
EXPLORERS OF QUEENSLAND;**

BY

A. W. CLARKE,

**MINERALOGICAL LECTURER APPOINTED BY THE QUEENSLAND
GOVERNMENT.**

PREFACE

THE primary object in the arrangement and cataloguing of Group VIII. (Division C, Classes 53-58) is to show, at a glance, the resources of each individual mineral and gold field of Queensland. The collection is thus more of commercial than scientific interest.

As the colony has as yet no mineralogical department or collection to draw from for display on these occasions, it can be readily understood that the Colonial and Indian Exhibition Commissioners would have required a much longer time than the few months at their disposal for the collection and description of the minerals of a colony which is the youngest of the Australian Colonies, and covers an area of 668,224 square miles.

There may appear a preponderance of rocks in the collection, but for two reasons this is an advantage: firstly, because the practical miner can recognise the occurrence of any ordinary mineral geologically at sight; and secondly, because, whatever may be the ultimate destination of the collection, there will be opportunity for the future examination and comparison of these rocks with the rocks of other countries.

It was originally intended to furnish its analysis with each exhibit (where necessary), but unfortunately there was not sufficient time to do this work before sending the Catalogue to press, which explains why analyses have been so seldom referred to. The intention, however, will be carried out as far as practicable in an Appendix.

The Catalogue endeavours to portray, not only the past history, but the present condition of mining enterprise in Queensland. The analyses and remarks on the physical properties of the building stones exhibited are almost wholly taken from the Hon. A. C. Gregory's notes.

Having been appointed by the Commission in April, 1885, to collect minerals from the colony for this Exhibition, it was found impossible to visit every field within the time allotted for the preparation

of the collection, and thus some of the most important fields nearest the capital have received no direct attention; and but for the energy of private collectors, Gympie, Stanthorpe, and many other fields would be unrepresented. Cloncurry and Etheridge Gold Fields, in the far North, are well represented by the collections of the local committees and gold-wardens.

In the Northern fields, specimens were carried by pack-horse or in saddle-bags, and every assistance was afforded, not only by the wardens, but by the miners and residents of the various districts.

It occurred to me that the arrangement of a few specimens on an endless band, so that the latter could be made to revolve by hand under a lens, might be of interest; accordingly some sixty specimens are so exhibited. As they are duplicates of exhibits more or less described in the Catalogue, no particular mention is made of any specimen.

The Catalogue may be looked upon as a preliminary, and perforce hurried, attempt to catalogue the minerals of a country eleven times greater than England, and whose population (327,000) does not greatly exceed that of many provincial towns in the mother-country.

A. W. CLARKE.

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ERRATA.

Page 50, Specimen 310.—For “Auriferous gold” read “Auriferous quartz.”

Page 6, line 14.—For “hard” read “hand.”

Page 66, line 17.—For “1885” read “1886.”

CATALOGUE OF THE MINERALS

EXHIBITED IN THE

QUEENSLAND COURT.

PALMER GOLD FIELD.

THIS field is situated in the Cape York Peninsula, north-east of Queensland, on the Palmer River. It is the most northerly of all the mineral fields in Australia.

Maytown, 76 miles south-south-west of Cooktown—the port—and 135 miles by the main coach road, the official and commercial centre, is built on the River Palmer, and presents the usual aspects of an Australian mining township—i.e., a street of zinc houses, several hotels, and two or three public buildings. The court-house, post-office, and police barracks are commodious buildings; the hospital is pleasantly situated on a hill, over which a cool breeze generally plays throughout the year, and the climate is dry and healthy. The Press is represented by the *Palmer Chronicle*.

The known auriferous belt covers 2,000 square miles. Payable alluvial gold has been found in the bed of the Palmer and its tributary creeks for a distance of over 100 miles. In Maytown and its vicinity nuggets of gold have been found varying from 2 or 3 oz. to 100 and over. They generally have adherent particles of quartz showing the proximity of the quartz veins with which the gold was associated, and that have detrited away with the country rocks.

“Fifteen miles below Maytown, in the river bed, the gold is in a finer state of division; and 70 miles down the river, at Lukinville, the gold is very minutely divided but without deteriorating in value.”*

If all the gold (including the yield for 1885) that has been got or “won” from this field were to be melted and cast into a solid cube the edge would measure 4 feet and over half an inch. The gilt cube, No. 3, has been made to ocularly demonstrate this.

The gold is very minutely divided but still singularly pure; in fact, with the one exception of Mount Morgan in Queensland, and New Placer in New Mexico, it is the gold which has brought the highest price in the world. The price ranges from

* Hodgkinson's Report on Palmer Gold Field, October, 1883.

£3 18s. to £4 3s. 4d., according to Hodgkinson's Report. The following table has been compiled from "Lock on Gold," and gives the highest prices that gold has fetched in some of the various fields throughout the world :—

Gold Coast, Africa	£3 17 6
Maraba Town, Transvaal	3 18 0
Tasmania	3 18 8
Dargo, Gippsland, Victoria	3 19 6
Southern District	4 0 0
Tumut and Adelong (N.S.W.)	4 0 0
Highest prices (Queensland)	4 2 6
New Placer, Mexico (America)	4 3 4
Mount Morgan (Queensland)	4 4 8*

As with all goldfields, the first gold "won" was alluvial, and just after the rush in 1874 a population of 20,000 was sustained thereon, of which probably 18,000 were Asiatics (Report, Department of Mines, 1877-78). The last return for 1884-85 gives the population as follows:—

296 Europeans, of whom 66 are miners
907 Chinese, of whom 699 " "

Total population, 1,203	Total miners, 765.
-------------------------	--------------------

These figures show that the alluvial deposits are ceasing to attract, and that the abnormal returns of 3 to 5 oz. per diem (*vide Brisbane Courier* of 12th March, 1875, letter from Mr. Howard St. George, Gold-Warden) are no longer the rule, although the story of the Chance mine is an example of how hastily the claims were abandoned.

"Reefing" succeeded the first rush as usual, but to a limited extent, as the very wealth and profusion of the mineral deposits in North Queensland prevent a small mining population like ours from settling down for the development of outlying fields like the Palmer, Etheridge, and Cloncurry. So long as the alluvial deposit lasts the population remains, but quartz-reefing demands capital, a settled population, and, above all, combined and sustained effort. This condition cannot be fulfilled in a new district of a new country. When the easily-got gold is "won," or when rumours get abroad of richer deposits elsewhere, claims are abandoned, and the exodus is as rapid as the original rush was. This happened on the Palmer, the Chinese taking up the abandoned claims of the Europeans.

Queensland Commissioners IDA REEF.

1. Hanging wall, 175 feet below surface.
2. Six specimens of gold in quartz from various levels.
3. } Footwall at 200 and 250 feet below surface.
4. }

* Dr. Leibius' Lecture, read before the Royal Society of New South Wales, 2nd July, 1884.

The returns since 1876 are:—

Year.	Tons.	Yield.		
		Oz.	dwt.	grs.
1876	... 495	1,400	5	9
1877	... 350	802	1	0
1878	... 532	1,253	8	0
1879	... 828	1,744	0	0
1880	... 1,238	3,064	10	0
1881	... 1,275	2,856	7	0
1882	... 884	1,374	19	0
1883	... 697	749	16	17
	6,299	13,256	7	2

Equal to 2 oz. 2 dwt. per ton.

The bearing of the reef is north 106 degrees east, the underlay dipping south. The reef averages 18 to 24 inches wide, and consists of a dense white crystalline quartz, with blue, very regular, amorphous laminations; the specimens exhibit gold in the quartz and in the laminations. Two shafts have been sunk 250 feet down.

Queensland Commissioners COMET REEF.

5. Hanging wall, 180 feet below surface.
6. Eight specimens of auriferous quartz, various levels.
7. Iron pyrites in slate wall.

Mr. Gold-Warden H. St. George.

- I. Bulk specimen of auriferous quartz from 180 feet below the surface.

The vein or reef is at present 2 feet thick. A crosscut has been made 80 feet, and levels driven both ways for 150 feet. Crashings to August, 1885, as follows:—1,665 tons yielded 3,619 oz. 7 dwt. 8 grs. gold.

Queensland Commissioners QUEEN OF THE NORTH.

8. Hanging wall, 190 feet below surface.
9. Three specimens auriferous quartz, 190 feet below surface.
10. Footwall, 190 feet below surface.
11. Hanging wall, 270 feet below surface.
12. Auriferous quartz, 270 feet below surface.

Mr. Gold-Warden H. St. George.

- II. Bulk specimens of auriferous quartz from 270 feet below surface.

The quartz in this claim is very similar to that in the Comet, except that the sulphur-yellow deposit between the

laminations, which is held to be the best indication for gold throughout the field, is more strongly marked here. There is no sulphur in the yellow deposit. In the Petition and Report of the Deep Sinking Committee to the Legislature, dated 17th January, 1885, "The Queen" is reported to have crushed altogether 6,884 tons of quartz, yielding 18,849 oz. 8 dwt. 14 grs. gold, equal to 2 oz. 14 dwt. 18 grs. per ton.

Queensland Commissioners HART'S CONTENT.

13. Nine specimens of auriferous quartz showing visible gold.

The country rock is slate, and the specimens come from a depth of 90 feet. The shaft is 120 feet down, and the Deep Sinking Committee give the total quantity of stone crushed as follows:—678 tons quartz, yielding 2,368 oz. 9 dwt. 10 grs. gold, equal to 3 oz. 9 dwt. 20 grs. per ton.

Queensland Commissioners ST. PATRICK.

14. Auriferous quartz.

The Deep Sinking Committee report on this mine:—Shaft 100 feet down; quartz crushed, 977 tons, yielding 1,060 oz. 18 dwt. 12 grs. gold, equal to 1 oz. 1 dwt. 17 grs. per ton.

Queensland Commissioners ... QUEEN OF THE NORTH, Normanby Field.

15. Four specimens auriferous quartz and arsenical pyrites (mispickel).

These four specimens are from a division of the field called the Normanby, distant 75 miles east of Maytown. The Isabella has produced good stone, but the records are meagre; the last 100 tons quartz crushed 2 oz. 4 dwt. per ton, and the reef is from 16 inches to 3 feet thick. The pyrites in the Queen of the North is very rich in gold. Some of the leading merchants of Cooktown are about to erect a plant for the treatment of the pyrites locally. As the collector was unable to visit the field, there are no exhibits of country rocks to illustrate the geology thereof.

Queensland Commissioners ISABELLA, Normanby Field.

16. Specimen of auriferous quartz.

This specimen was in the possession of Mr. Warden St. George, and shows gold very finely divided on each face and between the laminations.

Queensland Commissioners HIT OR MISS.

17. Hanging wall.

18. Five specimens of auriferous quartz.

19. Footwall.

This mine is 175 feet down, and according to the report of the Deep Sinking Committee has crushed 1,207 tons of quartz, yielding 3,572 oz. 8 dwt. 12 grs. gold, equal to 2 oz. 19 dwt. 4 grs. per ton. The reef is about 16 inches wide.

Mr. Gold-Warden H. St. George.

III. Bulk specimens of auriferous quartz from 150 feet below surface.

Queensland Commissioners VIKING.

20. Auriferous quartz.

Mr. Gold-Warden H. St. George.

IV. Bulk specimens of auriferous quartz from 60 feet below surface.

One hundred and seventy-seven tons yielded 244 oz. 13 dwt. 20 grs. Slate and sandstone formation.*

Queensland Commissioners CANNIBAL CREEK.

21. Argentiferous galena.

This small piece was given to the mineral collector as a proof of the existence of galena on the field, but neither the locality nor the occurrence are known except to the finder. It assays 60 oz. silver to the ton.

Queensland Commissioners PURDIE'S REEF.

22. Auriferous quartz.

The specimen exhibits "nuggety" gold. The miners used to find it pay to "dolly" out the gold from the quartz in this claim. By "dollying" is meant pounding by hand in an iron mortar, and employing the elasticity of a sapling to lessen the effort of raising the heavy pestle.

Queensland Commissioners WELCOME STRANGER.

23. Auriferous quartz.

This mine is abandoned.

Queensland Commissioners.

24. Dyke.

This dyke appears to be diorite, and is a geological feature of the field. It bears N.W. S.E., and can be traced for many miles. (An analysis is given in the Appendix.)

* Mr. Gold-Warden H. St. George's Report.

Queensland Commissioners { PHOENIX MINE, Cannibal Creek, 16
miles from Maytown.

25. Cassiterite, dressed at company's works on lease.

26. Lode-tin.

These three specimens are from the company's mine. The shaft was flooded when the collector visited the mine, so we have to depend on outside report. Up to the present they have discovered no defined lode. Mr. Warden Hodgkinson says, in the Report of the Mines Department, that the quartz stringers are very numerous and carry some tin, and look as if they would join at no great depth to form a fair-sized lode; bunches of 7 to 8 cwt. have been obtained within 40 feet from surface. The outcrop appears to have been worked at first by hard picking and hammer dressing. The charges to port are—Packing from Granite Creek to Byerstown, £6 per 2,000 lbs. weight; thence by dray to Cooktown, £3 per 2,000 lbs.; ordinary commission charges (insurance and wharfage commission $2\frac{1}{2}$ per cent., exchange at 1s.) £1 4s. 11d., or a charge of £10 4s. 11d. per ton of 2,000 lbs., equal to £11 9s. 7d. per ordinary ton. When the company started to work the mines they put up a good plant with dressing-tables, &c.

27. Stream-tin.

Picked up on top of granite range, Granite Creek. Granite Creek is 9 miles from Cannibal Creek, and the two centres have turned out a good deal of tin in a short time. The first mention of stream-tin occurs in the Report of the Department of Mines for 1879, published in June, 1880. Mr. Warden Sellheim says: "I have granted during the year 46 extended alluvial claims. . . . Most of the grants are situated on Granite Creek waters. In this locality stream-tin occurs in association with gold, the latter being contributed by the slates that form the western lands of the creek. The eastern banks, being of granitic affinities, supply the tin concentrated from its matrix, and being conveyed to the main creek and its principal branches by numerous feeders, intermingles with the gold." (*Vide* specimen No. 28.)

The output of stream-tin from the Palmer for the year 1880 was 759 tons 15 cwt. (Annual Report, Mines Department) valued at £38,000. Messrs. Whitehead employed an average of 2 Europeans and 100 Chinese (Government Report for year 1880); they exported 200 tons in 1880, and 450 in 1879. Another firm employed on an average 4 Chinese, and obtained 10 tons stream-tin and $3\frac{1}{2}$ tons lode-tin; their workings are situated at Granite Creek. In 1881, 535 tons tin-stone were shipped from Cooktown; in 1882, 360 tons; and in 1883, 199 tons according to Annual Reports, Mines Department.

28. Auriferous stream-tin.

The particulars of the specimen are mentioned above; another sample of the exhibit is arranged under the magnifying apparatus.

Queensland Commissioners QUEEN OF THE NORTH.

29. Tailings.

These tailings have been piled up for three or four years, and the mispickel and iron pyrites have decomposed, and bound up the whole into a coherent mass. (An analysis is given in the Appendix.)

30. Tailings before cohesion.

Queensland Commissioners CHANCE MINE.

31. Hanging wall with calcite vein.

There are two samples of this, which is the solitary instance, so far, of the occurrence of calcspar in the field; the limestone range is many miles distant.

32. Auriferous quartz.

The collector was told of a fossicker who, in 1884, was "knapping" (chipping) the quartz boulders at the bottom of the gully beneath the claim, and finding one extra hard and heavy, carried it home and extracted 70 oz. by "dollying."

The Deep Sinking Committee's Report and Petition, before referred to, returns as the total output of the Chance 194 tons quartz yielding 634 oz. 18 dwt.; average, 3 oz. 5 dwt. 10 grs. per ton. The shaft is 115 feet; but it was exempt from work under Gold Fields Regulations when the collector was on the field.

Queensland Commissioners QUEEN OF BEAUTY.

33. Two specimens auriferous quartz.

Queensland Commissioners MOSSMAN CREEK.

34. Fine sandstone, bed of Mossman Creek.

35. Coarser sandstone.

36. Sandstone, top of range (desert sandstone of Daintree).

An auriferous deposit exists here which has been covered up by the denuding of the sandstone through which the creek has cut its way to junction with the Palmer River; the original creek bed is about 50 yards away from the present creek. Specimens 34 and 35 contain only traces of gold.

COOKTOWN.

J. C. Baird, Esq. COOKTOWN.

1365. Two samples of granite. (*Vide* Collection of Building Stones.)

J. C. Baird, Esq. BLOOMFIELD RIVER.

V. 82 lbs. stream-tin ore.

TINAROO DISTRICT.

Herberton is the official and commercial centre of the Tinaroo district. It is 80 miles from Port Douglas, and 50 miles from Cairns, the two ports of the field. Herberton was opened out as a tinfield by Mr. Gold-Warden Mowbray, who issued the first mining licenses on the 30th October, 1880, the town having been laid out by the same official on 21st August, 1880.

Messrs. William Jack, John Newell, Thomas Brandon, and John Brown discovered the district. The Great Northern prospecting claim was taken possession of by these gentlemen in May, 1880.

Stream-tin was first found by Mr. John Newell in the gully of the Great Northern prospecting claim, in November, 1879.

Mr. John Moffat, of Messrs. John Moffat and Co., introduced capital to the field; and that firm's private exhibit is a testimonial to their energy as well as to the great extent of their interest in the district.

There are several townships. The next in importance to Herberton is Watsonville. It was stated that the mills of Watsonville were turning out more black tin than even Herberton. There are some very rich claims in the neighbourhood, notably the North Australian, owned by Messrs. O'Loan and Casey, which turned out £50,000 worth of black tin in 2½ years, the mine only being worked by 6 men. The Great Western Company, who hold very important mines in the vicinity of Watsonville, was floated by Mr. John Moffat.

Coolgara is another township 25 miles from Herberton, and is the centre of Return Creek claims.

Irvinebank is quite new and very important, the centre of the finest group of properties yet discovered. The dressing plant for tin is the most perfect plant that could be got together—members of the firm of Messrs. John Moffat and Co. visiting Germany, and Cornwall, and Swansea for the express purpose of getting the very latest improvements incorporated into their plant at Irvinebank. The black tin is smelted on the spot, and the tin ingots are exhibited among the firm's private trophies.

Scrubby Creek is an agricultural centre; it is about 10 miles from Herberton. Cedar-trees grow in such great luxuriance here that it was found cheaper to send the Herberton minerals home in cedar cases.

Newelltown.—Silver galena and chalcopyrites occur here. The Silver Valley Mining Company have erected a Pacific smelter for smelting the galenas. It is 10 miles from Herberton.

Eureka Creek.—Discovered by Joss and party; is about 16 miles from Herberton and 10 miles from Watsonville. The tin deposits appear to be very rich in the vicinity of the camp.

California Gully, Halpin's Creek, and Gregory's Gully are mining centres and camps, within 9 miles of each other, and from 30 to 40 miles from Herberton.

The Tate River, 60 miles from Herberton, is the centre of a stream-tin deposit.

Mount Garnet is a hill about 35 miles from Herberton, *via* Return Creek (Coolgara). There is a huge outcrop of carbonate of copper (estimated at 4,000 tons) in sight, samples from which are stated to assay 20 per cent. copper.

Silverfield is the latest and most valuable acquisition to the mineral discoveries of the district, and as Mount Albion deposits include horn-silver and gold, Herberton appears to possess in its minerals gold, silver, tin, copper, and bismuth. For smelting purposes there are deposits of hæmatite and limestone; fire-clay has been found in the neighbourhood of Messrs. Moffat's mines. There is but one thing wanting to push this great mineral field ahead, and that want is on the point of being satisfied since the Legislature has voted the money for the Cairns-Herberton Railway.

On referring to the following table the enormous increase in the production, consequent upon the discovery of the Wild River and Great Western tin deposits, cannot fail to be observed:—

AMOUNT and VALUE of TIN ORE (CASSITERITE) produced in QUEENSLAND from 1872 to 1884.*

Year.	Quantity. Tons.	Value. £
1872 ...	1,383 ...	96,840
1873 ...	3,790 ...	208,993
1874 ...	3,193 ...	160,592
1875 ...	2,470 ...	103,740
1876 ...	2,325 ...	102,030
1877 ...	2,519 ...	94,462
1878 ...	1,178 ...	35,340
1879 ...	3,142 ...	106,010
1880 ...	1,553 ...	47,300
1881 ...	106,448 ...	2,168,790
1882 ...	27,312 ...	560,590
1883 ...	3,445 ...	135,119
1884† ...	2,615 ...	94,130
Totals ...	161,373 ...	3,914,036

* "A Treatise on Ore Deposits," by J. Arthur Phillips, 1884; and Annual Reports of Mines Department.

† Does not include output from the Palmer Field.

DESCRIPTIVE CATALOGUE.

RETURN of MACHINERY and ORE-SAVING and TREATING APPLIANCES in the WALSH and TIBAROO
MINING DISTRICT.*

Description of Plant.	Engines.	Horse Power.	Stamps.	Classifiers.	Jiggers.	Types.	Buddies.	Settlers.	Slime Tables.	Pumps.	Stone Breakers.	Toasting Machines.	Heberle Mill.	Water Wheel.	Saw Bench.	Furnaces.	Rollers.	Poling Vat.	Pan Blast.	Estimated Value
Herberton Tin Co., Herberton ...	1	15	15	2	4	1	5	...	...	...	...	3	...	...	...	...	...	...	...	7,000
Co-operative Tin Crushing Co., Herberton	1	10	10	2	...	2	3	...	...	...	...	2	...	...	...	...	...	...	...	3,500
Monarch Co., Nigger Creek ...	1	10	10	2	6	...	2	...	...	...	...	...	...	...	...	...	...	...	...	8,000
Great Western Tin Co., Watsonville ...	1	10	5	1	6	...	4	...	...	...	...	2	...	...	...	...	...	...	...	8,000
Bischoff Co., Walsh River ...	1	12	10	2	6	...	4	...	...	...	...	...	...	...	...	...	...	...	...	8,000
Victoria Crushing Plant, Return Creek ...	1	12	10	2	2	1	3	...	...	...	...	2	...	...	...	...	...	...	...	6,000
Irvinebank Crushing Plant, Irvinebank...	2	14	5	2	8	...	1	3	8	4	1	...	1	1	1	...	...	...	...	10,000
Smelting Works, Irvinebank ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	2,000
Pacific Smelter, Silver Valley ...	3	14	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	3,500
Totals ...	11	97	65	13	32	4	22	3	8	4	2	9	1	1	1	2	1	1	1	£56,000

* Annual Report, Mines Department, 1884.

SILVERFIELD.

Queensland Commissioners MARY KNOT.

- 37. Hanging wall, from surface.
- 38. Two specimens of country rock.
- 39. Cassiterite, from near the surface, showing occurrence in footwall.

Queensland Commissioners BAROSSA.

- 40. Surface country rock.
- 41. Two specimens of country rock, from the 40-foot level.
- 42. Three specimens of argentiferous galena.

Queensland Commissioners SILVERFIELD.

- 43. Five specimens of argentiferous galena, showing decomposition from exterior inwards.

The stages of the decomposition are well shown by the concentric rings. The fracture of some of these nodules exhibits the decomposition as complete, while in others only a speck of glittering galena is to be seen unchanged. In the Appendix will be found some analyses and remarks on this subject. The specimens are from above the water-level.

- 44. Country rock, surface.
- 45. Country rock, from the 70-foot level.
- 46. Specimen from the same mineral vein, but from a cutting on the hillside 15 feet below the workings from which the above specimens were taken.

Queensland Commissioners VICTORIA.

- 47. Argentiferous galena, showing fine grains and coarse cubes.
- 48. Stibnite and galena.

Queensland Commissioners CUMNOE.

- 49. Country rock.
- 50. Argentiferous galena greatly decomposed, and stained with copper carbonate, from the 40-foot level. There appears to be hæmatite and litharge in the lode.
- 51. Argentiferous galena, coated with ferric oxide and litharge. It is stated that this galena assays 800 oz. on the average. The highest assays gave 1,400 oz. to the ton.
- 52. Impure copper carbonate (malachite), from 40-foot level.
- 53. Hanging wall.

Queensland Commissioners MOUNT ALBION.

- 54. Hanging wall, from 30-feet level.
- 55. Hanging wall, from 80-feet level.
- 56. Galena decomposed, copper-stained. with litharge and ferric oxide.
- 57. Ironstone.
- 58. „
- 59. „
- 60. Specimens of small nodules of horn-silver.
- 61. Coarse and fine riddlings from the 4-feet level. Assays 432 oz. silver per ton.
- 62. Argentiferous ferruginous earths from 20 feet below the surface.
- 63. Various types of rich nodules, from different depths. Assays from 1,000 oz. per ton.

Queensland Commissioners CALEDONIA.

- 64. Cassiterite in hæmatite.

Queensland Commissioners J. LIDDLE'S CLAIM.

- 65. Galena, with litharge and ferric oxide, from 20-feet level.

Queensland Commissioners CUSCO.

- 66. Three samples of fine steel-grained galena ; assays 100 oz. per ton from 30-feet level.
- 67. Country rock.
This lode is well defined, and the outcrop can be traced for 2 miles. The average value of this galena for silver is 65 oz. per ton.

Queensland Commissioners WANDERER.

- 68. Two specimens of cassiterite in hæmatite from 60-feet level.
- 69. Cassiterite in country rock from surface.
- 70. Country rock from 40-feet level.
- 71. „ „ „ surface.
- 72. Two specimens of cassiterite, in gangue from 60-feet level.

Queensland Commissioners ... PINNACLE LEASE, Gregory's Gully.

- 73. Two specimens cassiterite, in pink orthoclase. One specimen shows quartz crystals.

Queensland Commissioners ADVENTURE.

74. Cassiterite, in kaolin and quartz granules.

Queensland Commissioners COSMOPOLITAN.

75. Three specimens of cassiterite, with quartz crystals, from 30-foot level.
76. Three specimens cassiterite, showing occurrence in kaolin, from 80-foot level.
77. Country rock.

Queensland Commissioners TORNADO.

78. Hanging wall from 170-foot level.
79. Country rock.
80. Three specimens sphalerite, chalcopryrite, mispickel, and galena, from 170-foot level.
- An analysis of this mixture of minerals will be found in the Appendix. The spiral arrangement of the pyrites crystals is peculiar; there are a few small minute crystals of quartz.
81. Cassiterite, in kaolin.
82. Hanging wall from 30-foot level.
83. Footwall from 30-foot level.

COOLGARA (RETURN CREEK).

Queensland Commissioners.

84. Cassiterite, stream-tin.

This sample was washed out of a dish of wash-dirt in the presence of the collector. The weight of produce is within 300 grains of 2 lb.

85. Cassiterite crystals.
86. Four specimens cassiterite in hæmatite.
- The analysis will be found in the Appendix.

Queensland Commissioners GREAT REPUBLIC.

87. Two surface specimens of cassiterite, in crystallised quartz.

Queensland Commissioners DERWENT MINE.

88. Hanging wall.
89. Cassiterite.
90. Three specimens cassiterite, with crystallised quartz and felspar.
91. Specimen of cupriferous galena occurring in limestone, about halfway between Mount Garnet and Coolgara.

Queensland Commissioners GRAND JUNCTION LINE.

92. Cassiterite in micaceous quartz.

Queensland Commissioners CITY POMPEII.

93. Two specimens of cassiterite.

Queensland Commissioners RETURN CREEK.

94. Two specimens cassiterite, found as boulders in creek.

Queensland Commissioners BLAIR'S CLAIM.

95. Three specimens cassiterite in hæmatite.

Queensland Commissioners MAGDALA.

96. Two specimens cassiterite in crystallised quartz, from 30-feet level.

97. Cassiterite from 50-feet level.

98. „ with crystallised quartz.

99. Two specimens of cassiterite in crystallised quartz.

Queensland Commissioners NEVADA CLAIM.

100. Cassiterite from surface.

IRVINEBANK.

Queensland Commissioners GREAT SOUTHERN.

101. Fine cassiterite, disseminated through hæmatite from 70-feet level.

102. Hanging wall from 70-feet level.

103. Footwall, surface.

104. „ from 70-feet level.

105. Cassiterite.

106. Country rock from 35-feet level.

Queensland Commissioners RED KING.

107. Three specimens cassiterite in hæmatite from surface.

108. Country rock.

Queensland Commissioners CLAIM ADJOINING FREETHINKER.

109. Cassiterite in crystallised quartz.

110. „ nearly "clean."

Queensland Commissioners LITTLE WONDER.

111. Cassiterite in hæmatite.

112. Country rock.

Queensland Commissioners LITTLE CLAIM.

113. Cassiterite in red hæmatite.

114. Footwall.

115. Hanging wall.

Queensland Commissioners CÆSUS.

116. Cassiterite, "clean," from 80-feet level.

117. " with fluorspar crystals, from 80-feet level.

118. Two specimens cassiterite, from 80-feet level.

Queensland Commissioners CITY OF BAGDAD.

119. Cassiterite.

Queensland Commissioners COMET.120. Two specimens cassiterite, "clean," from the 80-feet level,
N. lode.

121. Cassiterite in red hæmatite.

These two specimens come from surface.

122. Country rock from surface.

123. Two specimens of cassiterite, near surface, S. lode.

124. Hanging wall, 2 or 3 feet from surface.

125. Footwall, 2 or 3 feet from surface, N. lode.

126. Cassiterite, from 80-feet level, showing cavity filled with
crystals of quartz and hydrated ferric oxide.

127. Quartzite rocks with numerous specks of mispickel.

Queensland Commissioners FREETHINKER.

128. Country rock, 76 feet from surface.

129. Cassiterite, 30 feet from surface.

130. " 60 " "

Queensland Commissioners JOHN BULL.131. Two specimens cassiterite, with crystallised quartz and
felspar.*Queensland Commissioners* JOHN BULL No. 1.

132. Two specimens of cassiterite, in quartz.

Queensland Commissioners NORTH BRITAIN.

- 133. Mispickel in quartz crystals, from 30-feet level.
- 134. Cassiterite in quartz and felspar, from 30-feet level.
- 135. „ from 30 feet.

MOUNT GARNET.

Queensland Commissioners.

- 136. Malachite and azurite in gossan of lode
- 137. Red hæmatite, 40 feet from surface.
- 138. Country rock, 40 feet from surface.
- 139. Carbonates of copper on hæmatite.
- 140. Two specimens of the outcrops of the lode.
- 141. Carbonates of copper permeating hæmatite.
- 142. Galena very much decomposed, the decomposed portions showing stains of copper carbonate and minute crystals of cerussite.
- 143. Azurite and malachite from surface.
- 144. This mineral is exhibited merely on account of the analysis, which will be found in the Appendix. It is from the same mineral freehold, which is of 60 acres extent, and was granted to Messrs. J. A. J. McLeod and C. O'Loan as a prospecting claim.

It is stated that the argentiferous galena is rich in silver, and that asbolan has been found on the property. Mount Garnet is 19 miles from Coolgara and 35 miles from Herberton; so that, although there may be some 3,000 or 4,000 tons of copper carbonates in sight, nothing can be done till the Cairns-Herberton Railway has reduced the freight of goods to the coast—£7 a ton is a heavy tax on anything other than gold, silver, and tin.

NEWELLTOWN.

Queensland Commissioners TARGET MINE.

- 145. Decomposing galena.
This specimen comes from a tunnel driven into the side of a hill, and exhibits the same concentric markings of the different stages of decomposition, which were dwelt upon in the specimens from Silverfield [*c.f. No. 43*].
- 146. Two specimens of fine-grained galena.
- 147. Fine-grained galena, with quartz veins and carbonates.
- 148. Galena decomposing into litharge and cerussite on quartz and felspar.
- 149. Galena decomposing into litharge and cerussite.

150. Galena.

151. Gossan.

With the exception of the galena sample, all these specimens come from above water-level. When the collector visited the mine it was being worked by the Silver Valley Smelting Company, who have erected a Pacific smelter for treating the ore locally.

The lode runs 10 degrees S. of E. and dips at 60 degrees.

Queensland Commissioners POTOSI CLAIM.

152. Three specimens of limestone.

153. Two specimens of hæmatite.

These two minerals are being raised by the above firm for fluxing the Target and other silver-bearing ores.

Queensland Commissioners.

154. Two samples dressed tin ore (coarse and slimes) from Delaney's machine at Coolgara.

The tint of these samples is light brown. (The analysis will be found in the Appendix.) The ore is commonly known as the amber variety of tin-stone.

Queensland Commissioners RAINBOW.

155. Three specimens galena, from 80-foot level.

156. Decomposed galena—litharge, cerussite, and anglesite (?)

157. „ „ as above, stained with copper.

There are generally traces of chalcopryite and other minerals in galena. The greenish stains are therefore probably derived from the oxidation of these copper sulphides.

The strike of the lode is NW. SE., and is nearly vertical. The lode is from 2 to 4 feet wide. The country rock is black slate.

Queensland Commissioners... .. CALEDONIA.

158. Galena.

159. „ with ferric oxide and litharge.

160. Fine-grained galena.

161. Decomposed galena. Cerussite, litharge, &c.

162. Country rock adjacent to lode near surface.

The rock has been acted upon by the decomposing lode-stuff. (The analysis is given in the Appendix.)

Queensland Commissioners KOH-I-NOOR.

163. Two specimens of galena from 80-foot level.

164. Mispickel.

- 165. Sphalerite.
- 166. Iron pyrites, found in "dig" or casing of lode.
- 167. Sphalerite and fine-grained galena.
- 168. Country rock.

Queensland Commissioners JUST-IN-TIME.

- 169. Cassiterite, surface.
- 170. „ 20 feet below surface.
- 171. Country rock, 20 feet below surface.

EUREKA CREEK.

Queensland Commissioners GREAT EASTERN.

- 172. Cassiterite, in kaolin.
- 173. „ in red hæmatite.
- 174. „ in red hæmatite, from 70 feet below surface.

Queensland Commissioners CLAN RONALD.

- 175. Malachite, on hæmatite, from surface.
 - 176. Two specimens cassiterite, in felspathic quartz, from 20 feet below surface.
 - 177. Cassiterite, with felspar.
 - 178. „ with azurite.
 - 179. „ with azurite and malachite.
- These three specimens come from 20 feet below surface.
- 180. Cassiterite, in quartz.

Queensland Commissioners LASS OF GOWRIE.

- 181. Three specimens of cassiterite, from 60 feet below surface.
- 182. Cassiterite, in mica, from 60 feet below surface.
- 183. Country rock.

Queensland Commissioners BLACK ROCK.

- 184. Cassiterite, in chlorite (?), from 30 feet below surface.
- 185. „ in red hæmatite, from 70 feet below surface.
- 186. „ surface stone.
- 187. „ from 70 feet below surface.

Queensland Commissioners ECLIPSE.

- 188. Cassiterite, in quartzite.

Queensland Commissioners IVANHOE.

189. Two specimens cassiterite, in quartz and felspar, with specks of iron pyrites, from 50 feet beneath surface.
190. Cassiterite, in quartz, with specks of iron pyrites.
191. Iron pyrites, in quartz.
192. Cassiterite, in quartz and hæmatite, from surface.

Queensland Commissioners ROSE OF ENGLAND.

193. Crystallised iron pyrites, on quartz crystals.
194. Cassiterite, on quartz, from 100-feet level.
195. „ on quartz ; mica is present in the matrix.
196. Fluor spar.
197. Dyke through lode at 80-feet level.
198. Country rock.

Queensland Commissioners ... { SCHLAMELCHER'S COPPER CLAIM,
Newelltown.

199. Three specimens of copper ore, probably chalcopryite.

Mr. Schlamelcher raised several tons for the purpose of concentrating the ore to a matte in a cupola furnace, as in the Mansfield process. The experiment failed mainly on account of the complex nature of the ore, and for other reasons. It is an ore which could hardly be treated locally, and transit to Europe is out of the question till the Herberton railway is opened.

WATSONVILLE.

Queensland Commissioners UNION CLAIM.

200. Cassiterite, in quartz, from surface.

Queensland Commissioners STEWART'S T. CLAIM.

201. Country rock, through which tunnel has been driven.
202. Cassiterite, containing iron pyrites and trace of copper.
203. Footwall of lode.
204. Cassiterite, in quartz, with iron pyrites.

The claim is on the Great Western Hill. "A shaft 65 feet deep has been sunk near the southern boundary of the ground, on a north-west and south-east quartz reef which underlies slightly to the south-west. At the bottom of the shaft the quartz continues as a narrow shoot, but for the last 12 feet contains no tin-ore, although it is still accompanied by wolfram and pyrites. A sort of footwall with a serpentinous face continues all the way down. At the bottom a hanging wall of dark diorite is seen—probably a dyke with which the quartz reef is connected. In the

north-west corner of the ground is a shaft 50 feet deep on a ferruginous and chloritic joint which underlies to the south-west. The shaft is sunk through the joint, which has tin-ore on the under side. In the corner, near the Queen of the West, is a north-east and south-west lode of arsenical pyrites and red peroxide of iron, with some blue and green carbonate of copper and red copper-ore. On the south-east side of the lode is a coarse-grained diorite dyke with large quartz blebs, the quartz containing a little tin-ore. A tunnel has been driven to the north-east for 255 feet on the course of the dyke. Tin-ore nearly 3 feet wide is seen in a narrow horizontal floor. Other floors of ore further along the tunnel underlie to the north-east. At 200 feet the tunnel is intersected by a shaft which reaches its bottom level at 70 feet and is continued for 40 feet below. At the surface the lode is about 1 foot in width, and contains good tin-ore. Thirty-five feet further along the tunnel a blind shaft has been sunk for 40 feet below the level of the tunnel. At the bottom of the blind shaft the ore is in a vein a few inches to 2 feet thick and 6 feet wide, occurring in coarse-grained diorite, underlying at a high angle to south-south-east. The vein contains also much copper pyrites and some tin pyrites. Above this shaft the roof of the tunnel has been stoped out to the height of 18 feet. The tin ore is said to have been 7 feet wide in some places. The tunnel continues about 20 feet beyond the blind shaft, through porphyry country below the pyritous footwall of the dyke, from which the water brings out hair-like crystals of copper sulphate.*

HERBERTON.

Queensland Commissioners ... GREAT NORTHERN PROSPECTING CLAIM.

- 205. Two specimens cassiterite, in red chlorite and quartz, from the Gully lode.
- 206. Cassiterite, in red chlorite, from 120-feet level, Gully lode.
- 207. " " " " with mica, from 120-feet level, Gully lode.
- 208. Fluor spar, from 216-feet level.
- 209. Cassiterite, 216-feet level.
- 210. Fluor spar, on quartz crystals, 216-feet level.
- 211. Cassiterite, in quartz, surface.
- 212. Country rock.
- 213. Cassiterite, with very fine quartz needles, from 100-feet level, No. II. lode.
- 214. Cassiterite, from 100-feet level, No. II. lode.

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist, 1883.

215. Cassiterite, with quartz and steatite, from 100-foot level, No. II. lode.
 216. Cassiterite, with quartz and steatite, from 216 feet level.
 217. Wolfram in quartz, No. II. lode.
 218. "Lode formation," 216-foot level, Gully lode.

"The most conspicuous feature of the P.C. on the surface is a wide dyke of compact, highly silicated, yellowish or pinkish felsite or elvan with quartz blebs. The elvan sometimes passes into quartzite, and is sometimes veined with quartz. The quartz is sometimes charged with mispickel. A cavity in the elvan dyke, in size and shape like the interior of a coffin, has its sides coated with the blue carbonate of copper. The Gully lode has a general trend of N. 20 degrees E. to S. 20 degrees W., and is nearly vertical. It is a dyke, probably once of quartzose diorite, but which has undergone much metamorphism. South of the principal shaft the dyke terminates, so far as the surface is concerned, against a vertical wall of porphyry running NE. and SW.; this wall stands about 10 feet above the level of a floor of puddled clay designed to keep the water of the gully out of the workings. The dyke and ore have been quarried up to this wall."*

"Two chains south of the 60-foot shaft an elvan dyke is seen traversing the porphyry country from south-east to north-west. To the north-west it probably intersects a north-and-south quartz reef which is visible at intervals on the surface. To the south-east a wedge-shaped mass of red syenite (widening south-eastward) adjoins the elvan on its north-eastern side. More or less ore was obtained all the way down in sinking the 60-foot shaft. The matrix of the ore is a dark-green chlorite rock with grains and kernels of quartz. Sometimes reef quartz replaces the chlorite. The chlorite rock is in all probability a dyke, originally erupted as a quartzose diorite, and which has subsequently undergone much alteration. The dyke was probably never continuous at the level of the present surface, but I have little doubt of its connection at some low level with the Erin-go-Bragh."*

Queensland Commissioners HIBERNIAN.

219. Cassiterite, mixed with quartz crystals, from 30 feet below surface.

220. Cassiterite, in hæmatite, at 50 feet level.

Queensland Commissioners SUNRISE.

221. Cassiterite, with quartz crystals.

* Abridged from "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack.

Queensland Commissioners SURPRISE.

222. Two specimens cassiterite, in quartz with talc.

Queensland Commissioners MOWBRAY.

223. Three specimens cassiterite, in felspathic quartz, from 30-foot level.

Queensland Commissioners THREE STAR.

224. Country rock, surface.

225. Lode, at surface, showing cassiterite veins in matrix.

226. East wall, surface.

227. West wall, at 50 feet below surface.

228. Cassiterite in quartz, at 50 feet below surface.

229. East wall, at 50 feet below surface.

230. West wall, at 150 feet below surface.

231. Cassiterite, at 150 feet below surface.

232. East wall, at 150 feet below surface.

"This claim presents the peculiarity—almost without parallel on the field, although so common in Cornwall and elsewhere—of an elvan dyke containing payable tin-ore. The elvan is of the usual type—a silicated felstone, with quartz blebs. Its western side is seen in the west shaft, with porphyry adjoining. The shaft is 150 feet deep. The elvan runs north 20 degrees west, and goes down vertically in the shaft. At about 10 feet deep the elvan becomes mixed with vein-quartz, and the matrix becomes serpentinous, the quartz blebs still remaining distinct. Fair tin-ore occurs in the shaft here.

"One chain to the east three shafts are sunk on the course of the dyke. The northmost is 12 feet deep, the central and southern each 40 feet. The elvan is much mixed here with vein-quartz. A little stone is left—quartz with tin-ore. About 50 tons of stone were bought on the ground by the Herberton Tin Company for £16 10s. per ton.

"A shaft about 1½ chains to the east has been sunk 50 feet. The eastern edge of the elvan is seen in a cutting at the surface. The width of the dyke is therefore about 100 feet. In the shaft, at the depth of 40 feet, is a 2-foot quartz-vein with tin-ore at the junction of the elvan with porphyry. A wedge-shaped diorite mass, partly decomposed and partly very hard and quartzose, comes in at the north end of the shaft."*

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist 1883.

Queensland Commissioners ... INDUSTRY REWARDED, California Creek.

233. Three specimens cassiterite in chloritic matrix.

Queensland Commissioners GREGORY GULLY.

234. Cassiterite in quartz.

The matrix in these two specimens appears to be micaceous.

235. Iron pyrites, cassiterite, and chalcopyrite, associated with quartz.

Queensland Commissioners... ... ARBOUIN'S CLAIM.

236. Cassiterite in quartzite.

KING OF THE RANGES, Watsonville.

237. Cassiterite in decomposing felspar.

"The workings are mainly open-cast following two slips or lodes; the northern running NNE. and underlying WNW., and the southern running ENE. and underlying at 65 degrees to NNW. On the upper or northern slip a 50-foot shaft has been sunk. A band of quite unaltered slate, striking E. and W., is seen at the mouth of the open-cast in contact with the porphyry of the country. A drive has been started to cut the deposit where the tin-ore was lost, on a very fine-grained, hard, black diorite, running ENE. and containing arsenical pyrites."*

Queensland Commissioners BISMARCK.

238. Cassiterite in quartz.

Queensland Commissioners RETURN CREEK.

239. Garnets in chloritic rock.

Queensland Commissioners NEWELLTOWN.

240. Cerussite crystals, with litharge on galena.

Queensland Commissioners Mowbray.

241. Cassiterite and quartz, interesting merely on account of its being the first found on the Mowbray claims.

Queensland Commissioners ALEXANDRA, Mowbray.

242. Three specimens of cassiterite on quartz.

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist, 1883.

Queensland Commissioners LOVELY ETHEL, Return Creek.

- 243. Three specimens of cassiterite crystals on quartz crystals.
- 243A. Cassiterite, with red hæmatite.
- 244. Two specimens cassiterite, with crystallised quartz.
- 245. Crystals cassiterite.

Queensland Commissioners. NORTH AUSTRALIAN.

- 246. Hanging wall, at 51-feet level.
- 247. Specimen from clay cavity, 40 feet from surface.
- 248. Footwall at 51-feet level.
- 249. Cassiterite.
- 250. "Lode formation" at 40-feet level.
- 251. Cassiterite, surface.
- 252. Cassiterite in quartz.
- 253. Specimen taken out of mine four years ago, stated to contain arseniate bismuth, tin oxide (cassiterite), sulphide silver (argentite), pyrites, chalcopyrite, and cobalt.
- 254. "Lode formation," 50-feet level, carries a little tin in the quartz.
- 255. Iron pyrites, in lode formation from 65 feet below surface.
- 256. Two specimens of azurite.
- 257. Fine-grained cassiterite, associated with steatite.

"This mine has proved hitherto a very valuable property, having yielded a large amount of ore in return for the simplest possible work. When first discovered the "blow" or outcrop stood several feet above the ground. It has been worked down to the depth of 24 feet in an open-cast 10 to 20 feet wide, and extending about 50 feet north-north-west and south-south-east. The country is greywacke and shale, with a dip at 35 degrees to the south-west. The tin-ore occurs in "heads" or joints, at right angles to the dip of the stratified rock. The ore has a distinct character of its own, It is fine-grained, grey, and friable, but occasionally finely crystalline on faces. The grey colour results from the presence of steatite in the interstices between particles of the ore. A few blocks of pure ore lying at the surface weigh some hundredweights each."*

Queensland Commissioners IRONCLAD.

- 258. Two samples black oxide of copper, from 30-feet level.
- 259. Hanging wall, 30-feet level.

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist, 1883.

260. Footwall, 30 feet.

261. Cassiterite in felsite.

262. (An analysis of this mineral will be found in the Appendix.)

"This claim adjoins the North Australian to the north-east, but differs widely from it in its characteristics. It extends about 11 chains north-westward and 5 chains north-eastward. Near the southern corner of the claim is the 'copper shaft.' It is 30 feet deep, and is sunk on a deposit of carbonate of copper and ochres, which runs mainly east and west, and underlies to the south. The country is alternating shale and greywacke. In the latter the deposit is contracted, and in the former wide and diffuse. About 70 feet up the hill (to the north) another lode is seen. Its cap was red gossan and green carbonate of copper. The lode has been followed in labyrinthine open-cast and other workings till it communicates with the bottom of the 'copper shaft.' Shortly below the cap the copper-ore begins to be intimately and extensively mixed with tin-ore in small grains. From the upper levels in the open cutting about 5 tons of stone were taken, which realised £55 in Sydney. It is granular tin-ore with a small proportion of tile-ore (ferruginous red oxide of copper) and ochre, and a little green and blue carbonate of copper. At the very end of the claim is seen, on the north side of the Herberton road, the outcrop of a strong lode of copper carbonate, underlying to south 40 degrees east at 30 degrees." *

Queensland Commissioners CHRISTMAS EVE.

263. Azurite and malachite, associated with quartz.

264. Two samples of cassiterite with quartz crystals.

265. Specimen of cassiterite and quartz, foliated alternately,
The specimen has a pink tint and comes from Irvinebank.

Queensland Commissioners CHANCE MINE, Watsonville.

266. Country rock stained with copper, from about 25 feet beneath surface.

267. Cassiterite, on which are stellate groups of crystals not yet determined, though probably they are some of the zeolites mentioned by Mr. Jack.

The analysis is given in the Appendix.

268. Cassiterite in chlorite and quartz.

269. Cassiterite in quartzite.

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist, 1883.

270. Wolfram crystals in ferruginous gangue, containing quartz and some cassiterite.

"In the middle of the ground to the west of St. Patrick's Day Claim, and south of the gully, a shaft has been sunk to the depth of 88 feet. On descending this I found for the last 80 feet a perpendicular joint trending north-north-east. Against this there abuts a joint running west-north-west and underlying at 70 degrees to north-north-east. This latter was followed on the bottom level for 18 feet, and tin-ore was found underlying it all the way. At 18 feet the tin-ore shot to south-south-east, and was followed by a drive in that direction for 12 feet. It occurred mainly in joints and heads. Near the surface a brecciated gangue is seen in the shaft, and about half-a-ton of arsenical pyrites and copper pyrites, coated with sulphate and green carbonate of copper, has been raised from this place. The stone now being raised from the bottom is a fine-grained bluish-black chlorite with small and sparse quartz blebs and very fine-grained tin-ore interspersed. Up the hill from the present main shaft is a short tunnel with a 40-foot shaft sunk at the inner end on something not now accessible for water, running south-south-west and dipping east-south-east. The tunnel traverses porphyry country. Ferruginous chlorite is seen at the mouth of the shaft. There is at grass about a ton of iron pyrites, marcasite and copper pyrites with a coating of copper sulphate, and 19 tons mixed green and red chlorite ore with tin in crystals and finely disseminated, amounting to, say, 5 per cent. Near the north end of the ground is a shaft 38 feet deep on a dyke of quartzose chlorite 12 feet wide. The dyke is well seen in the open cutting at the mouth of the shaft and runs to north-north-east. At the depth of 10 feet some carbonates and lumps of red oxide of copper are seen. In the north-west corner of the ground is a shaft 48 feet deep. At the bottom the shaft cut the top of a dyke (running north 15 degrees west and underlying to east 14 degrees north) of soft decomposing diorite with green treacherous steatite joints. On the top of the dyke is a ferruginous gangue with a little quartz and tin-ore, and a good deal of wolfram. The tin-ore, which may amount to 10 per cent., is mixed with quartz and a zeolite."*

271. Three specimens from Nigger Creek, stated to be like the opal matrix of Springsure.

Queensland Commissioners ... BOUNDARY TRIBUTE, Watsonville.

272. Cassiterite, in quartz and felsite.

* "Report on the Tin Mines of Herberton, Western, and Thompson Creek Districts," by R. L. Jack, Government Geologist, 1883.

Queensland Commissioners AUSTRALIAN LEASE.

273. Cassiterite crystals, with felspar and quartz, from 50 feet beneath surface.

274. Specimen of crystallised cassiterite, with quartz crystals.

The specimen probably comes from the "Lovely Ethel," but the miner who gave it to the collector was unable to state the exact locality, except that it was found in the Tinaroo district.

Queensland Commissioners FIRST SHOT, Return Creek.

275. Decomposed galena, with litharge, cerussite, and hæmatite.

276. Cassiterite in chlorite.

277. " in quartzite.

Queensland Commissioners EUREKA CLAIM.

278. Cassiterite, from 20 feet below surface.

279. " with granular quartz and hæmatite.

280. Finely divided cassiterite, associated with steatite and quartz.
(An analysis is given of this specimen in the Appendix.)

Queensland Commissioners GLEN CAIRN.

281. Hanging wall, 80 feet from surface.

282. Footwall, 80 feet from surface.

283. Cassiterite, in a minute state of division, in country rock.

284. "

285. " with quartz and felspars.

286. " in ferruginous matrix.

Queensland Commissioners BONNIE DUNDEE, Coolgara.

287. Hanging wall.

288. Footwall.

289. Cassiterite crystals and mica in ferruginous matrix, from 20-foot level.

291. Cassiterite, in red chloritic matrix, from 20-foot level.

292. " and mica, in ferruginous matrix, from 15-foot level.

293. Cassiterite, in decomposed felspar.

*295. Wolfram.

Queensland Commissioners ———, Coolgara.

*294. Bismuthite from a claim once worked for bismuth, but the demand is so slight that the market is quickly overstocked, therefore the claim is at present "exempt from work."

* The numbering is purposely inverted.

J. C. Baird, Esq., Cooktown... PROSPECT GULLY, Herberton.

VI. Three pieces of tin-ore, bulk specimens.

Mr. Jack winds up the report, which has been quoted before, with the following:—

“One fact comes out clearly and unmistakably from a detailed examination of the field, now that something more than the mere surface is accessible to observation. That fact is the intimate connection of the tin deposits with metamorphosed igneous dykes. Such dykes, emanating from a deep-seated reservoir of molten matter, forced their way under pressure into fissures in the solid porphyry rock and consolidated as basic igneous rocks. The basic rocks of the dykes seem to have undergone a gradual process of metamorphism. The dykes now consist mainly of quartzose chlorite and occasionally of quartzose serpentine. It may be inferred that they were originally consolidated as quartz diorites or as rocks more or less of the basaltic type. The tin occurs in floors, veins, or pipes among the joint-planes of the dykes.

“It is quite possible that the tin may have come up in the first instance molten with the molten mineral matter of the dyke. In that case it is probable that it was afterwards dissolved and re-deposited in the open joint-planes of the dyke. A further separation and redistribution may have taken place simultaneously with the chemical or electric action which resulted in the metamorphism of the dykes.

“On the other hand, the tin may have first come up in solution, after the consolidation of the dykes, along the walls of the latter and among the fissures and joint-planes by which they were traversed, and been deposited there. A re-solution of the tin-ore would probably take place on the metamorphism of the dykes; and as the metamorphosed dykes had probably a new joint-system developed in them, a further concentration of the ore may have taken place.

“In any case there is nothing to favour the supposition that waters containing tin in solution and circulating through the upper portion of the earth's crust failed to deposit tin-ore in the porphyry, but deposited it immediately on meeting with the metamorphosed dykes. On the other hand, there are good grounds for supposing that the tin was carried up, either with the dykes in a molten condition, or was carried up in solution by mineral waters along the lines of the dykes. In either case the permeation of the adjacent porphyry by the mineral waters may explain the occasional occurrence of tin ore in the ‘country rock.’ In either case, as the dykes have originated in a deep-seated mass of molten matter, they may be expected to carry the tin-ore to greater depths than are ever likely to be reached by mining. The metamorphosed dykes are traversed by a series of dykes of quartz porphyry, strictly analogous to the elvans of Cornwall. They do not, however, appear to be in this field prolific sources of ore. Indeed, the ‘Three Star’ and ‘Herberton Ironclad’ elvans are almost the only known cases of stanniferous elvan. It appears, however,

from the cases of the Erin-go-Bragh and Southern Cross, that the elvans have occasionally served to re-open the basic dykes and permit of a further local deposition of tin-ore.

"Deposits of ore of such a nature as have been described are not to be mined on the ordinary principles of quartz-reefing. Hardly a mine on the field does not offer illustration of errors in judgment committed through regarding all sorts of joints and fissures as hanging walls or footwalls. The only walls in such cases are the walls of the dykes, or, to speak in easily understood language, the planes of contact between the blue rock and the porphyry. A systematic method of prospecting by sinking shafts and driving main levels at intervals of, say, 10 fathoms along the course of the dyke, and cross-levels from the main levels to the walls, would be the most economical plan possible in such circumstances."

Catalogue of John Moffat and Co.'s Private Exhibit of Minerals.

George Young, owner SILVERHILL CLAIM.

1000. Coarsely crystalline galena, showing concentric rings of carbonate of lead resulting from the decomposition of the sulphide. From surface cutting.

1001. Specimen, showing centre of bright fibrous galena, with casing of decomposed ore. From Upper Tunnel.

1002. Fine granular galena, with decomposing casing in concentric rings. From shaft in Upper Tunnel.

1003. Fine granular galena, with concentric rings of grey carbonate of lead. From 20 feet in shaft.

1004. Fine granular galena, with concentric rings of grey carbonate of lead. From 20 feet in shaft.

1005.

1006.

1007.

1008.

1009.

1010.

1011. Fine granular galena.

Average assay, 65 oz. of silver per ton.

George Young, owner SILVERFIELD CLAIM.

1012. Bright fibrous galena, No. 1 cutting.

1012A. Fibrous galena, No. 2 cutting.

1013. " " "

1013A. " " No. 2 shaft, 20 feet.

JOHN MOFFAT AND CO.'S EXHIBIT—continued:

1014. Granular galena, showing casing of decomposed ore, being carbonate of lead, No. 2 shaft, 35 feet.

1015. }
1016. } Granular galena, showing casing of decomposed ore, being
1017. } carbonate of lead, No. 2 cutting.
1018. }

Average assay, from 65 oz. to 81 oz. silver per ton.

George Young, owner VICTORIA CLAIM.

1019. Fibrous galena—No. 1 surface cutting.

1020. }
1021. } " " No. 2 cutting.
1022. }
1023. }

Average assay, from 65 oz. to 114 oz. silver per ton.

George Young, owner CUZCO CLAIM.

1024. Specimens of fine granular galena, from No. 1 surface cutting.

1025. }
1026. } Specimens of fine granular galena from 30 feet in shaft.

1027. }
1028. } Specimens from No. 2 cutting.

Average assay, 65 oz. silver per ton.

HARDMAN AND ROECASTLE'S CLAIM.

1029. }
1030. } Fibrous galena, from surface cutting.

1031. " " surface.

Geo. Young, owner BARASSO CLAIM.

1032. Coarsely crystalline galena—No. 1 shaft, 30 feet.

1033. " " showing yellow oxide of lead,
from No. 1 shaft, 46 feet.

1034. }
1035. } Coarsely granular galena, from 30 feet in shaft.

1036. Argentiferous galena and carbonate of lead, from 60 feet in shaft.

1037. Coarsely crystalline galena, from shaft, 20 feet.

1038. Argentiferous galena, showing results of decomposition, coated with oxides of lead and iron.

JOHN MOFFAT AND Co.'s EXHIBIT—continued :

- 1039. } Galena from shaft 20 feet.
- 1040. }
- 1041. Specimen showing decomposition of galena into grey ore,
from 58 feet in shaft.
- 1042. Friable carbonate of lead, from surface cutting.
- 1043. Two specimens decomposed galena, from shaft, 60 feet.
- 1044. Argentiferous ore—oxide of iron with carbonate of lead—
from 65 feet in shaft.
- 1045. Argentiferous carbonate of lead, from 40 feet in shaft.
- 1046. " " " from surface cutting.
Average assays, from 30 oz. to 212 oz. silver per ton.

George Young, owner ALBION CLAIM.

- 1047. Two surface specimens of decomposed galena.
- 1048. Portions of nodules of argentiferous galena (two specimens), found in centre of boulders of carbonate of lead and decomposed galena; surface cutting.
- 1049. Argentiferous earth containing 380 oz. silver per ton. The silver exists in this as a chloride. Taken from 79 feet in shaft.
- 1050. Horn-silver (Ag. Cl.), containing 75 per cent. silver, found in ferruginous silver-bearing earth. Sample from surface cutting.
- 1051. Argentiferous earth from surface cutting; slugs of horn-silver found in proximity.
- 1052. Argentiferous earth, containing 375 oz. silver per ton, from 72 feet in shaft.
- 1053. Argentiferous iron-ore, from 20 feet in shaft.
- 1054. Horn-silver, containing 75 per cent. silver, from surface cutting.
- 1055. Highly argentiferous iron-ore; the centre is a soft, friable, earthy red ochre, rich in chloride.
- 1056. Argentiferous iron-ores, 20 feet in shaft.
- 1057. Argentiferous earth (chloride of silver) assaying 2,314 oz. silver per ton; taken from 10 feet below surface.
- 1058. Specimens of iron-ores, some with concretionary structure; argentiferous; from 12 feet in shaft.
- 1059. Argentiferous iron-ore, 74 oz. of silver per ton, from 20 feet in No. 2 shaft, Albion Lady Jane Blow.
- 1060. Specimens similar to above, from same shaft, 30 feet.
- 1061. Argentiferous earth, assaying 424 oz. silver per ton, from shaft, 30 feet.

JOHN MOFFAT AND Co.'s EXHIBIT—continued :

1062. Argentiferous earth (fine siftings), assaying 571 oz. silver per ton.
 1068. Sample in bag of argentiferous earth (coarse siftings), assaying 392 oz. silver per ton.
 1064. Argentiferous earth (coarse siftings), assaying 522 oz. silver per ton.

SPECIMENS OF TIN-ORE FROM IRVINEBANK AND DISTRICT.

John Moffat and Co., owners **GREAT SOUTHERN CLAIM.**

1065. Lode tin-ore from No. 2 shaft, 40 feet.
 1066. " " " 25 "
 1067. " " 60-feet level.
 1068. " " "
 1069. " " No. 3 face.
 1070. Tin ore found on cap of lode.
 1071. Green chlorite containing finely disseminated tin-ore from No. 1 shaft.

John Moffat and Co., owners **RED KING CLAIM.**

1072. Two specimens tin-ore, in chlorite, from surface cutting.

John Moffat and Co., owners **TYECONNEL CLAIM.**

1073. Tin-ore with quartz gangue.
 1074. " " chlorite "
 Both from surface cutting.

John Moffat and Co., owners **TORNADO CLAIM.**

1075. Lode tin-ore, surface cutting.
 1076. " " from 25 feet in shaft.
 1077. " " " 34 " "
 1078. " " " 60 " "
 Containing iron pyrites.
 1079. Lode tin-ore with quartz gangue.

John Moffat and Co., owners **FREETHINKER CLAIM.**

1080. Coarse crystals of cassiterite, embedded in kaolin coloured by iron; shaft, 20 feet.
 1081. Two specimens lode tin-ore, from shaft, 50 feet.

JOHN MOFFAT AND CO.'S EXHIBIT—continued :—

1082. Tin-ore in quartz gangue, surface.

1083. Cassiterite, in quartz gangue, with specks of galena, from 80 feet in shaft.

John Moffat and Co., owners **NO NAME CLAIM.**

1084. Two specimens cassiterite in red chlorite, from shaft 80 feet.

John Moffat and Co., owners **COMET CLAIM.**

1085. Lode tin-ore, in red chlorite, surface cutting.

1086. Quartz gangue, containing cassiterite.

1087. Three specimens from surface cuttings.

1088. Compact green country rock containing tin-ore.

John Moffat and Co., owners **LUCKY HILL CLAIM.**

1089. Lode tin-ore.

1090. „ „ in chlorite, from shaft, 20 feet.

1091. Stream-tin found in Gibbs Creek.

1092. Two waterworn specimens containing tin-ore, found in Gibbs Creek during construction of dam.

JOHNSON'S CLAIM.

1093. Lode-tin, surface cutting.

LITTLE'S "NEW IMPROVEMENT."

1094. Specimen of tin-ore from surface cutting.

John Moffat and Co., owners **LITTLE WONDER CLAIM.**

1095. Four specimens chlorite containing finely disseminated tin-ore.

J. WHITE'S "MARY" CLAIM.

1096. Two specimens chlorite containing tin.

John Moffat and Co., owners **GIBBLET'S "COLUMBA" LEASE.**

1097. Surface specimen containing tin found on cap of lode.

1098. Tin-ore, from 10 feet below surface.

THOMPSON'S CLAIM, Irvinebank.

1099. Four characteristic specimens of tin-ore.

DAY DAWN CLAIM.

1100. Two specimens containing tourmaline quartz and tin-ore ; surface cutting.

JOHN MOFFAT AND Co.'s EXHIBIT—continued:—

John Moffat and Co., owners ... GIBBLET'S ELIZABETH LEASE.

1101. Three surface specimens containing tin-ore.

1102. Specimen from Halpin's, near Irvinebank, containing tin-ore.

John Moffat and Co. WATSON'S ROYAL STANDARD.

1103. Characteristic specimen of tin-ore.

John Moffat and Co. FREY'S "PINNACLE" CLAIM.

1104. Four characteristic specimens containing pink felspar and cassiterite.

John Moffat and Co. CALIFORNIAN CLAIM.

1105. Two large surface specimens, rich in tin, which occurs in a coarsely crystalline form.

John Moffat and Co. ... { "INDUSTRY REWARDED" CLAIM, California Creek.

1106. Specimen of tin-ore.

John Moffat and Co. JOSE'S CLAIM, Eureka Creek.

1107. Two characteristic tin specimens.

John Moffat and Co. IVANHOE, Eureka Creek.

1108. Characteristic specimen of lode tin-ore.

John Moffat and Co. ARBOUVIN'S CLAIM, Eureka Creek.

1109. Four characteristic specimens of tin-stone.

John Moffat and Co. ALEXANDRA CLAIM, Mowbray.

1110. Four specimens of lode tin-ore.

John Moffat and Co. FARLEY'S CLAIM, Emu Creek.

1111. Characteristic specimens of tin-stone.

John Moffat and Co. ROMA CLAIM, Emu Creek.

1112. Characteristic specimen of tin-stone.

John Moffat and Co. CITY OF BAGDAD CLAIM, Emu Creek.

1113. Characteristic specimen of tin-stone.

John Moffat and Co., owners ... GIBBLET'S CLAIM, Emu Creek.

1114. Four surface specimens found on cap of lode. (Not working.)

JOHN MOFFAT AND Co.'s EXHIBIT—*continued* :—

John Moffat and Co., owners "GIBBLET," Emu Creek.

1115. Three surface specimens found on cap of lode. (Not working.)

John Moffat and Co. STENHOUSE'S CLAIM, Emu Creek.

1116. Characteristic specimens of tin-stone.

John Moffat and Co. NORMANBY CLAIM, Emu Creek.

1117. Two characteristic specimens of tin-stone therefrom, stained with green carbonate of copper.

John Moffat and Co. CREBUS CLAIM, Emu Creek.

1118. Two specimens of tin-stone, 80 feet in shaft.

John Moffat and Co. CURBAN'S CLAIM, Emu Creek.

1119. Tin-ore, in chlorite from tunnel.

John Moffat and Co. W. MILLER'S CLAIM, Emu Creek.

1120. Specimen of tin-stone.

John Moffat and Co.... CITY OF POMPEII CLAIM, Emu Creek.

1121. Specimen of tin-stone.

John Moffat and Co. WOOLOMAN'S CREEK.

1122. Specimen from lode. (Unworked.)

John Moffat and Co. MINNIE MOXAM CLAIM, Wooloman's Creek.

1123. Tin-stone.

John Moffat and Co. WOOLOMAN'S CREEK (lode unworked).

1124. Two surface specimens of tin-stone.

John Moffat and Co. POLSON'S CLAIM, Return Creek.

1125. Tin-stone.

John Moffat and Co. NOEL'S CLAIM, Wooloman's Creek.

1126. Three tin-stone specimens.

John Moffat and Co.... "JOHN LIDDELL," Wooloman's Creek.

1127. Tin-stone specimen.

John Moffat and Co. "THE TWO FRIENDS," Wooloman's Creek.

1128. Tin-stone specimen.

JOHN MOFFAT AND Co.'s EXHIBIT—continued:—

John Moffat and Co. ... "NEVER CAN TELL" CLAIM, Return Creek.

1129. Three specimens of tin-stone.

John Moffat and Co. MAGDALA CLAIM, Return Creek.

1130. Five specimens characteristic tin-stone.

John Moffat and Co. VICTORIA CLAIM, Return Creek.

1131. Three characteristic specimens of tin-stone.

John Moffat and Co.... MORNING STAR, Return Creek.

1132. Tin-stone.

John Moffat and Co. ... "THE BRITON" CLAIM, Return Creek.

1133. Three specimens of tin-stone.

John Moffat and Co.

1134. Bag of about 10 lbs. of fine black tin-slimes, dressed at Messrs. John Moffat and Co.'s Loudon Mill, Irvinebank. Dressed by tables.

1135. Bag of about 10 lbs. of coarse black tin-slimes, dressed at Messrs. John Moffat and Co.'s Loudon Mill, Irvinebank. Dressed by tables.

1136. Bag of about 10 lbs. of fine sands, black tin, dressed at Messrs. John Moffat and Co.'s Loudon Mill, Irvinebank. Dressed by jiggers.

1137. Bag of about 10 lbs. of coarse sands, black tin, dressed at Messrs. John Moffat and Co.'s Loudon Mill, Irvinebank. Dressed by jiggers.

1138. Four bags machine-dressed black tin.

John Moffat and Co.

1139. Bulk specimen of tin-stone from Great Southern claim.

John Moffat and Co.

1140. Two specimens tin-stone from Comet claim.

John Moffat and Co.

1140A. Two specimens silver-ores from Albion claim, Silverfield.

John Moffat and Co.

1140B. Silver ore from Silverfield.

JOHN MOFFAT AND Co.'s EXHIBIT—continued:—*John Moffat and Co.*

- 1140c. Fireclay found in the vicinity of, and used in making firebricks for the construction of, the smelting furnaces at Irvinebank.

John Moffat and Co.

1141. Specimen of tin-stone from the "Happy Thought" claim. W. Rawlings, Irvinebank.

John Moffat and Co.

1142. Surface lode-tin, Tookey's claim, near Irvinebank.

John Moffat and Co.

- 1142A. Stream-tin, California Creek.

John Moffat and Co.

1143. Bulk specimen tin-stone, Tornado claim. John Moffat and Co., owners, Irvinebank.

John Moffat and Co.

1144. Bulk specimen tin-stone, Great Southern claim; John Moffat and Co., owners, Irvinebank.

John Moffat and Co.

1145. Bulk specimen tin-stone, from John Moffat and Co.'s Tornado claim, Irvinebank.

1146. Two bulk specimens tin-stone, from John Moffat and Co.'s Tornado claim, Irvinebank.

John Moffat and Co.

1147. Bulk specimen, Great Southern claim, Irvinebank; John Moffat and Co., owners.

John Moffat and Co.

1148. Bulk specimen, Comet claim, Irvinebank; John Moffat and Co., owners.

John Moffat and Co.

1149. Bulk specimen, Elizabeth claim, Irvinebank; John Moffat and Co., owners.

John Moffat and Co.

1150. Twelve ornaments of tin from Messrs. John Moffat and Co.'s Smelting Works, Irvinebank, North Queensland.

List of Minerals collected and exhibited by Local Committee.

Herberton Local Committee ... { GREAT NORTHERN TIN MINING
COMPANY.

- 1151. Cassiterite, in chlorite, estimated 40 per cent., from Gully lode; depth 20 feet.
- 1152. Cassiterite, quartz felspar, and pyrites, 30 per cent. tin; Gully lode, depth 120 feet.
- 1153. Bulk specimen cassiterite, with quartz and chalcopyrite; 50 per cent. tin; depth 210 feet.
- 1154x. Brown cassiterite, in quartz gangue, Eastern lode; 55 per cent. tin; depth 80 feet.
- 1155x. Cassiterite, in black chlorite; 40 per cent. tin; depth 100 feet.
- 1156x. Cassiterite, with quartz and felspar, Eastern lode; 25 per cent. tin; depth 220 feet.
- 1157. Country rock, from Gully lode.
- 1158. " " " Eastern lode.
- 1159. Dressed tin, from cassiterite crushed from the above claim, 72·4 per cent. metallic tin.
- 1160. Dressed tin, from cassiterite crushed from the above claim, 73 per cent. metallic tin.
- 1161. Dressed tin, from cassiterite crushed from the above claim, 73·4 per cent. metallic tin.

Herberton Local Committee ... ROSE OF DENMARK CLAIM, Coolgara.

- 1163x. Cassiterite, from lode 4 feet wide; depth 80 feet.

Herberton Local Committee ... VESUVIUS CLAIM, Thompson Creek.

- 1164x. Cassiterite, from lode 18 inches wide; with granite and diorite walls; depth 50 feet.

Herberton Local Committee ... TASMANIAN CLAIM, Coolgara.

- 1165x. Cassiterite, surface.
- 1166x. " "

Herberton Local Committee... ... VESUVIUS No. 4 CLAIM.

- 1167x. Cassiterite, from surface, yields by crushing 40 per cent. black tin.

Herberton Local Committee ... "WHO-THOUGHT-IT" CLAIM, Coolgara.

- 1168x. Cassiterite, from 18-inch lode; depth 37 feet.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—

Herberton Local Committee "LOVELY ETHEL."

1169x. Two specimens cassiterite, from lode 4 feet wide; formation porphyry; depth 70 feet.

Herberton Local Committee ALEXANDRA CLAIM.

1170x. Cassiterite, averaging 50 per cent. black tin; lode 12 inches; formation granite walls undefined; depth 90 feet.

Herberton Local Committee BONNIE DUNDEE CLAIM.

1171x. Two specimens cassiterite, from Coolgara, 25 miles from Herberton, awaiting crushing.

Herberton Local Committee ECLIPSE CLAIM.

1173. Cassiterite, from No. 2 Spar lode, 4 feet wide; depth 20 feet. 30 tons on grass awaiting crushing.

Herberton Local Committee BLACK ROCK EXTENDED.

1174. Cassiterite, from chlorite lode, worked by cutting and tunnel; width of lode unknown. Trial crushing, 40 per cent. black tin; depth 20 feet.

1175. { Three specimens cassiterite, from chlorite lode, worked
by cutting and tunnel; width of lode unknown.
1176. { Trial crushing, 30 per cent. black tin.

Herberton Local Committee EUREKA CREEK.

1177. Sample of stream-tin ore; average assay, 75 per cent. metallic tin.

Herberton Local Committee BRADLAUGH.

1179. Cassiterite; depth 80 feet.

1180. " " 50 "

1181. " " 20 "

Herberton Local Committee CLAN ROLAND, Eureka Creek.

1182. Cassiterite, with copper carbonates; surface.

1183. " and wolfram; depth 10 feet.

Herberton Local Committee GLEN CAIRN, Watsonville.

1184. Cassiterite, in quartz; depth 50 feet.

1185. " in porphyry; depth 60 feet.

Herberton Local Committee SPEAR CLAIM, Watsonville.

1186. Cassiterite in quartz; depth 80 feet.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—

Herberton Local Committee Gregory's Gully.

1187. Cassiterite, in hard granite surface.

Herberton Local Committee CHANCE, Watsonville.

1188. Cassiterite, from depth 50 feet. Trial crushing yield, 35 per cent.

Herberton Local Committee BLACK ROCK, Eureka Creek.

1189. Cassiterite with wolfram; depth 10 feet.

Herberton Local Committee CLAN ROLAND, Eureka Creek.

1190. Cassiterite, in porphyry; depth 30 feet.

Herberton Local Committee...OAKLEY CREEK, 5 miles from Watsonville.

1191. Cassiterite, in felspar; depth 20 feet.

Herberton Local Committee Eureka Creek.

1192. Cassiterite, in quartz; depth 50 feet.

Herberton Local Committee KING OF RANGES, Watsonville.

1193. Cassiterite, from bottom of shaft; depth 90 feet.

1194. Low-class tin-stone, from same shaft; 60-feet depth.

Herberton Local Committee ... { CHINAMAN'S GARDEN, 4 miles from
Watsonville.

1195. Cassiterite, crushing on trial, from 50 tons, 41 per cent. black tin.

Herberton Local Committee Eureka Creek.

1196. Cassiterite; depth 70 feet.

1197. „ 20-feet depth; 30 per cent. black tin.

Herberton Local Committee ... { ARBOUIN'S TIN MINE, 5 miles from
Watsonville.

1198. Cassiterite; depth 25 feet; 32 per cent. black tin.

1199. Two specimens cassiterite; depth 60 feet; 45 per cent. black tin.

Herberton Local Committee PERSEVERANCE CLAIM.

1200. Two specimens cassiterite, in ferruginous rock; depth 30 feet.

Herberton Local Committee INDUSTRY REWARDED.

1201. Lode cassiterite in the vicinity of stream-tin workings.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—continued:—

Herberton Local Committee VICTORIA LEASE, Coolgara.

1202. Low-class cassiterite; depth 100 feet.

1203. Cassiterite, with country rock; depth 120 feet.

Herberton Local Committee ... CHRISTMAS EVE CLAIM, Coolgara.

1205. Cassiterite, with quartz crystals.

Herberton Local Committee FIRST SHOT CLAIM.

1206. Cassiterite, from 18-inch lode at 30-feet depth; crushing not satisfactory.

1207. Cassiterite, from 18-inch lode at 30-feet depth; crushing not satisfactory.

Herberton Local Committee BOLTON FOLLY, Watsonville.

1208. Cassiterite, with garnets; depth 30 feet.

Ironclad Tin Mining Company, owners ... IRONCLAD, Watsonville.

1209. Cassiterite, showing small percentage of copper, from junction of slate and granite at depth of 70 feet.

Herberton Local Committee { PERSEVERANCE, 5 miles from
Watsonville.

1210. Cassiterite.

Herberton Local Committee CITY OF POMPEII.

1211. Cassiterite, in quartz country rock; depth 30 feet; lode 2 feet wide.

Herberton Local Committee "LOVELY ETHEL," Coolgara.

1212. Cassiterite, in porphyry formation; depth 70 feet; width of lode 4 feet.

Herberton Local Committee ALEXANDRA, Thompson's Creek.

1213. Cassiterite, averaging 50 per cent. black tin, from 12-inch lode; depth 80 feet.

Beaconsfield Company BONNIE DUNDEE, Coolgara.

1214. Cassiterite, in chlorite. Crushing unsatisfactory.

1215. " " " "

Herberton Local Committee ... STARS AND STRIPES, Emu Creek.

1218. Cassiterite, 50 per cent.; granite country; lode 6 inches wide; depth 25 feet.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—

Herberton Local Committee "LOVELY ETHEL."

1219. Cassiterite, in quartz ; depth 20 feet.

Herberton Local Committee "ST. PATRICK."

1221. Cassiterite found on the surface in the early discovery of the Wild River Tin Mines.

1222. Bulk specimen from same mine.

Herberton Local Committee BAKERVILLE.

1223. Cassiterite, from surface.

Herberton Local Committee ROSE OF ENGLAND.

1224. Bulk specimen of cassiterite in quartz, from 60-feet depth.

Herberton Local Committee NORTH AUSTRALIAN.

1225. } Cassiterite, with greywacke and shale ; depth 30 feet.
1226. }

Herberton Local Committee... .. THREE-STAR, Herberton.

1228. Bulk specimen of cassiterite, from 120-feet depth ; regular crushing from this mine averages 40 per cent. black tin.

Herberton Local Committee BISMARCK, Watsonville.

1229. Cassiterite, with felspar and quartz ; depth 70 feet.

Herberton Local Committee REPUBLIC, Coolgarr.

1230. Cassiterite ; depth 30 feet.

Herberton Local Committee KOH-I-NOOR.

1231. Argentiferous galena, assaying 187 oz. silver per ton ; depth 60 feet.

1232. Argentiferous galena, assaying 187 oz. silver per ton ; depth 70 feet ; formation slate and porphyry.

1233. Argentiferous galena, assaying 187 oz. silver per ton ; depth 70 feet ; formation slate and porphyry.

1234. Argentiferous galena, assaying 120 oz. silver per ton ; depth 80 feet.

Herberton Local Committee... .. REPUBLIC.

1235. Decomposed galena, assaying 561 oz. silver per ton ; depth 14 feet.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—*Herberton Local Committee* MOUNT GARNET.

1236. Iron gossan, containing carbonates of copper; cap of a large blow, which can be traced for $1\frac{1}{4}$ miles.
1237. Low-class carbonates of copper, with percentage of silver.
1238. Cupriferous galena, partly decomposed into litharge and cerussite.
1239. Two specimens cupriferous galena, partly decomposed into litharge and cerussite.

Herberton Local Committee MAGDALA, Coolgara.

1241. Cassiterite, from lode 7 feet 6 inches wide; depth 70 feet.

Herberton Local Committee { NORTH QUEENSLAND SILVER MINING
COMPANY, Newelltown.

1242. Argentiferous galena, from 6-feet lode; depth 50 feet; assaying 68 per cent. lead, 190 oz. silver per ton.
1244. Argentiferous galena; assaying 64 per cent. lead, 147 oz. silver per ton; 5 to 6 feet lode; depth 60 feet.
1245. Argentiferous galena; assaying 78 per cent. lead, 209 oz. silver per ton; 5-feet lode; 65-feet depth.
1246. Argentiferous galena; assaying 75 per cent. lead, 203 oz. silver per ton; 6-feet lode; depth 30 feet.
1247. Argentiferous galena; assaying 56 per cent. lead, 90 oz. silver per ton; 5-feet lode; depth 30 feet.
1248. Argentiferous galena; assaying 75 per cent. lead, 100 oz. silver per ton; 6-feet lode; depth 60 feet.
1249. Argentiferous galena; assaying 75 per cent. lead, 100 to 125 oz. silver per ton; 7-feet lode; depth 65 feet.

Herberton Local Committee ARIZONA.

1250. Sulphurets, copper-ore.

Herberton Local Committee NEWELLTOWN.

1251. Sulphurets, copper-ore; depth 30 feet.

Herberton Local Committee ... HERBERTON TIN SMELTING COMPANY.

1252. Tin slag.

Herberton Local Committee TASMANIAN.

1253. Cassiterite in felspar; depth 20 feet.
1254. „ depth 25 feet.
1255. „ depth 30 feet.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—*Herberton Local Committee* LITTLE WONDER.

1256. Ferruginous cassiterite in porphyry; depth 10 feet.

1257. Two specimens cassiterite; depth 20 feet.

Herberton Local Committee LY-EE-MOON, Herberton.

1259. Cassiterite in quartz; last crushing gave 25 per cent. black tin, affording proprietors £10 per week.

Herberton Local Committee IRONCLAD.

1260. Cassiterite with granite; depth 20 feet.

1261. " " "

Herberton Local Committee ALEXANDRA.

1262. Cassiterite with quartz; depth 10 feet.

1263. " " " 25 "

1264. " " " 15 "

Herberton Local Committee ROYAL STANDARD, Gregory's Gully.

1265. Cassiterite in gneiss; depth 10 feet.

1266. " " " 20 "

1267. }

1268. } Characteristic specimens tin-stone.

1270. }

Herberton Local Committee STEWART'S T CLAIM.

1271. Cassiterite depth 300 feet.

1272. Two specimens country rock, foot-wall; depth 305 feet.

1273. Change of country, barren for tin; depth 305 feet.

1274. " " " " " 310 "

1275. Country rock, with mispickel; depth 290 feet.

Herberton Local Committee CHANCE.

1276. Cassiterite and felspar; depth 20 feet.

1277. " depth, 25 feet.

1278. " and iron pyrites; depth 30 feet.

1279. " " "

1280. Cassiterite; arsenical pyrites on cap of lode.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—

Herberton Local Committee ... { NORTH AUSTRALIAN TIN MINING
COMPANY.

1281. Bulk specimen of cassiterite weighing 4 cwt. Tin-ore to the value of £50,000 was taken from this mine in two years by six men; it is still one of the best paying mines in the district.

1282. Carbonates of copper; depth 50 feet.

1283. Cupriferous cassiterite; depth 110 feet.

Herberton Local Committee ARIZONA, Newelltown.

1284. Azurite; depth 10 feet.

1285. Cap of copper lode, which can be traced for 2 miles.

Herberton Local Committee NORTH BRITAIN.

1286. { Cassiterite, associated with galena, chalcopryite, cerussite,
and quartz. Width of lode, 5 feet 6 inches; depth,
1287. { 30 feet.
1289. Footwall.

Herberton Local Committee GLEN CAIRN, Watsonville.

1290. Cassiterite; depth 50 feet.

1291. " " 60 "

1292. " " 70 "

1293. Hanging wall; depth 80 feet.

1294. Footwall; depth 90 feet.

Herberton Local Committee BISMARCK, Coolgara.

1295. Cupriferous and ferruginous gossan.

1296. Carbonate of copper; depth 10 feet.

1297. Three specimens carbonate of copper, surface.

Herberton Local Committee MULLIGAN FREEHOLD, Newelltown.

1298.)
1299. { Copper-ore.
1300.)

Herberton Local Committee { BAKER'S CLAIM, 5 miles from
Watsonville.

1301. Cassiterite.

Herberton Local Committee IVANHOE.

1302. Cassiterite; trial crushing gave 22 per cent. black tin.

HERBERTON LOCAL COMMITTEE'S EXHIBIT—*continued* :—

Herberton Local Committee BOLTON'S FOLLY.

1304. Cassiterite and garnets.

Herberton Local Committee Emu Creek.

1305. } Cassiterite.
1306. }

Herberton Local Committee STEWART'S T CLAIM.

1307. Bulk specimen cassiterite ; depth 300 feet.

Herberton Local Committee CLAN ROLAND.

1308. Cupriferous cassiterite.

Herberton Local Committee ... INDUSTRY REWARDED, California Creek.

1310. Cassiterite, found in the vicinity of stream-tin workings.

Herberton Local Committee MORAN BROS., Emu Creek.

1312. Cassiterite in quartz.

Herberton Local Committee BISMARCK, Watsonville.

1313. Cassiterite in quartz.

1314. " " depth 30 feet.

Herberton Local Committee EUREKA.

1315. Cassiterite and wolfram.

1316. "

Herberton Local Committee Oakey Creek.

1317. Cassiterite and granite.

Herberton Local Committee ROSE OF ENGLAND.

1318. Wolfram, containing small percentage of tin.

Herberton Local Committee SILVER CROWN.

1320. Iron gossan, containing cassiterite.

1321. Cap of lode, containing 20 oz. silver per ton.

1322. Cassiterite ; depth 10 feet.

1323. }
1324. } "

HERBERTON LOCAL COMMITTEE'S EXHIBIT—continued:—

1325. Cassiterite, of high percentage; depth 15 feet.

1326. „

1328. Country rock, from 20-feet depth.

Herberton Local Committee STEWART'S T CLAIM.

1329. High-class tin-ore; depth 300 feet.

Herberton Local Committee CHRISTMAS EVE, Coolgara.

1330. Cassiterite; depth 30 feet.

Herberton Local Committee Eureka Creek.

1331. Cassiterite in country rock; depth 20 feet.

Twenty-nine different samples of crushed tin-ore in various forms from Herberton Bischoff Tin Crushing Company.

Fine-dressed tin-ore, from North Australian Tin Mining Company.

Messrs. John Moffat and Co. Irvinebank.

Particular attention is called to the trophy exhibit of Messrs. John Moffat and Co. The base of the trophy is built of country rocks (hand specimens of which are exhibited in the cases). Clean tin-stone is exhibited in bags alternating with pillars of ingots of metallic tin, and the whole is surmounted by an ornament of the same metal. The design is by Messrs. John Moffat themselves.

HODGKINSON GOLD FIELD.

Situated about 60 miles south-west of Port Douglas, on the Hodgkinson River. Thornborough is the commercial and official centre. Among the Government buildings are the court-house (a fine commodious building of brick), a school of arts' reading-room and library, a hospital, brick church, post-office, &c.

Kingsborough, another centre, is 3 miles north-east of Thornborough. Among the Government buildings are the State school, the court-house (a handsome brick building), and the school of arts' reading-room and library; population 150.

Mr. Gold-Warden Towner, in the Annual Report of the Department of Mines for 1884-85, estimates the population of the district on the 31st December to have been 770, being a slight decrease under this head as compared with 1883, when the population was 789. At present there are 131 European miners, 43 Chinese quartz-miners, 10 antimony-miners, 46 business people, 87 women, 158 children, and 60 labourers; the rest is made up of Chinese gardeners, etc.

RETURN of MACHINERY for the YEAR 1884.

Name of Machine.	Description.	Locality.	Horse Power.	Stamp Heads.	Bordans.	Arrestors.	Denny's Patent	Wheeler's Concentrators.	Buddles.	Wheeler's Pans.
Mowbray ...	Portable ...	Glen Mowbray ...	14	5	1	...	...	1	...	1
Hercules ...	Portable ...	Thornborough ...	16	16	1	...	...	...	...	...
Vulcan ...	Stationary	Kingsborough ...	25	15	3	...	...	...	1	2
Brisbane ...	Portable ...	Woodville ...	14	10	3	...	...	...	...	...
Perseverance ...	Stationary	Springs ...	14	15	2	...	...	...	...	...
Monarch ...	Portable ...	Beaconsfield ...	14	10	1	1	...	...	...	1
Lady Marian ...	Portable ...	Northcote ...	8	9	1	...	...	...	...	...
Magnet ...	Stationary	The Union ...	16	5	...	...	...	...	...	1
Loadstone ...	Stationary	Stewarttown ...	14	10	...	...	...	...	...	1
Enterprise ...	Portable ...	McLeod's ...	8	6	1	...	1	...	...	...
Rob Roy ...	Vertical ...	Homeward Bound ...	7	...	...	...	...	...	...	...
Mark Twain ...	Portable ...	Mark Twain ...	4	...	...	...	...	...	...	...
Black Ball ...	Vertical ...	Black Ball ...	3	...	...	...	...	...	...	...
Tyroconnel ...	Stationary	Tyroconnel ...	12	...	...	...	...	...	...	...
Union ...	Stationary	Union Mine ...	8	...	...	...	...	...	...	...
			177	101	13	1	1	1	1	6

The field is a quartz-reefing field, and was at first of very great richness.

If all the gold that has been got or "won" from this field were to be melted and cast into a solid cube, it would be of the size of cube No. VII., the statistics of which are printed thereon.

Mr. Jack, the Government Geologist, in his Report to the Mines Department, for 1884, says:—"After ascending from the coast flats near Port Douglas, a slaty and schistose tableland extends, at an elevation varying from 900 to 1,800 feet, to Anderson's homestead, a few miles beyond the Mitchell. Then a sudden transition takes place marked by an equally abrupt ascent, and the 'granite,' or Hann's Tableland, forms a lofty barrier between the Mitchell and Hodgkinson waters. Its general elevation is from 1,500 to 2,000 feet. It is only a few miles in breadth. It divides the slates and schists of the coast regions from the slaty formation of the Hodgkinson which forms the country rock of this remarkable goldfield. The stratified rocks vary in fineness from shales to conglomerates. . . . Slaty cleavage is not entirely unknown, but so rare and uncertain in direction that it may be presumed that pressure of the sort which results in the production of cleavage has been very feebly exerted. Alternating with the shales are strata of greywacke, whose materials are essentially the same but have not suffered comminution to the same extent. The greywackes bear to the shales the same relation which sand bears to mud. The component grains or granules are partly derived from a basic felspar and partly from a hornblendic rock. The felspatho-hornblendic matrix contains minute

flakes of mica and grains of quartz. The mica and quartz have apparently been derived from a pre-existing granitic rock. According to the frequency and size of the quartz grains, the greywackes pass by fine gradation into grits and conglomerates. The latter, however, contain, in addition to quartz pebbles, pebbles of quartzite, or hardened siliceous sandstone, porphyry, lydian-stone, dark shale, and limestone."

Mr. Gold-Warden Towner says in the Annual Report of the Department of Mines for the year 1881: "Manganese has been discovered by a party of prospectors on the Main Dividing Range on or near the boundary of the field, about 20 miles from Port Douglas; the ore is of high percentage and the lodes are very large."

To the east the field is bounded by granite, and to the west by the desert sandstone of Mount Mulligan, which forms a conspicuous table-land. Mr. Jack says:—"The lowest bed is seen to rest to the west of Woodville on vertical greywackes and shales, which strike N. and S. It consists of a coarse conglomerate with a grey matrix of granite débris. The pebbles are mainly of quartz and quartzite with a few of porphyry and granite. There are also a good number of hardened greywackes and a few of hardened shale. This bed is horizontal and about 60 feet in thickness. It contains an occasional parting of red laminated mud or shale. The next succeeding bed is of red sandstone, and forms mural precipices, 150 feet high, without an accessible gap from near the Union to a long way round the south end of the table-land, a distance of 10 or 12 miles. The Mount Mulligan plateau still forms a stronghold of the aboriginal population. The same formation covers the palæozoic rocks over the greater part of the York Peninsula." Mr. Jack has divided the auriferous reefs into two groups. Those of the first group coincide in their strike with the strike of the strata in which they occur. The second group runs mainly north and south, and at right angles to the lines which denote the outcrops of the stratified rocks. Their underlie is always to the east, and they probably belong to a period subsequent to the first series of fissures.*

GROUP I.

Tasmania	Von Moltke	Tyrconnel
North Star	Lizzie Redmond	Black Prince
Outward Bound	Pioneer	Henry Grattan
Amy Moore	Lady Mary	Commodore
Vulcan	Mark Twain	Hero
Britannia	Emperor	Hope
Caledonia	Rob Roy	And others.
Forget-me-not	Garryowen	

GROUP II.

Bismarck	Mowbray	Devon and Cornwall
Lady Ann	Fourth July	Alliance
Flying Pig	King Attila	Honest Lawyer
Idaho	Providence	Columbia
Great Northern	Tichborne	Eureka.
Empress of India	Explorer	

* Report on Hodgkinson Gold Field, by R. L. Jack, Government Geologist.

Queensland Commissioners MARQUIS REEF.

296. Hanging wall.

297. Auriferous quartz, with iron pyrites; 90-feet level.

298. Two specimens auriferous quartz, with galena specks; 90-feet level.

299. Footwall.

Mr. Gold-Warden Towner, Thornborough.

299x. Specimen showing free gold.

Queensland Commissioners MACDONALD'S P.C.*

300. Auriferous quartz, with galena specks.

301. Auriferous quartz.

302. Country rock.

303.

" " These specimens all come from a depth of about 40 feet.

Queensland Commissioners VICTORY.

304. Hanging wall, 106 feet below surface.

305. Two specimens of auriferous quartz taken from reef at about 100 feet below surface.

On looking attentively at these specimens very fine gold can be discerned. A specimen of this quartz is exhibited under the magnifying apparatus.

306. Two specimens auriferous quartz.

307. Footwall, adjacent lode.

308. Country rock.

Queensland Commissioners HIT OR MISS.

309. Footwall, 100 feet below surface.

310. Auriferous gold; three specimens, showing coarse gold.

A specimen of this quartz is exhibited under the magnifying apparatus.

311. Auriferous quartz, with iron pyrites and galena.

312. Country rock, 100 feet below surface.

Mr. Gold-Warden Towner, Thornborough.

310x. Auriferous quartz.

Owing to the brown iron-stains on this specimen it must be carefully examined to recognise the gold. It weighs 2,294 oz. 4 grs., and by S. Gr. ought to yield by crushing $1\frac{1}{2}$ dwt. gold, equal to about 480 oz. of gold to the ton of stone! An ore carrying a hundredth part of this would be very rich; so the specimen illustrates the fact that bulk specimens of average ore may be very disappointing

* "P.C." is the abbreviation for "prospecting claim."

to an inexperienced eye, since generally the gold must be all but invisible. In a word, since this picked specimen has to be inspected with some care to recognise the gold in it when it averages 480 oz. to the ton, it is perfectly reasonable that in the majority of cases we should be unable to see the gold at all in a stone averaging 1 or 2 oz. to the ton.

Queensland Commissioners **BLACK BALL.**

- 313. Hanging wall, at 20 feet below surface.
- 314. " " at 200 feet below surface.
- 315. Footwall, at 20 feet below surface.
- 316. Quartz, with galena and auriferous iron pyrites.

The structure is shown in the specimen; a dense quartz, interlaminated with layers of steatite and black slate.

- 317. Auriferous quartz, average sample.
- 318. " " two specimens.
- 319. " " showing gold on galena.

Since March, 1877, 1,359 tons 12 cwt. quartz have been crushed for a yield of 1,672 oz. 12 dwt., which averages 1 oz. 4 dwt. 14 grs. per ton. Mr. Jack says:—"At the 205-feet level the reef is rather flatter than its general underlie. It is 2 to 3 feet in thickness at the end of the level. The quartz has its joints coated with carbonate of lime, which has a greenish tint from a minute quantity of carbonate of copper." The water pumped out of the mine must be very strongly charged with calcic carbonate, as the children of the neighbourhood put twigs and other trifles in the channel of the water, and in a few days they become what is erroneously termed "petrified."

The reef runs north and south, and dips west, and the laminated quartz contains specks of mispickel; the mispickel sticks close to the grey streaks.

Queensland Commissioners **MARK TWAIN.**

- 320. Hanging wall, showing pyrites, from 250-feet level.
- 321. Auriferous iron pyrites in quartz, from 250-feet level.
- 322. Auriferous quartz as raised—no visible gold—from 250-feet level.
- 323. Auriferous quartz.

The gold in this specimen is visible to the naked eye.

Mr. Gold-Warden Towner, Thornborough.

- 323x. Auriferous quartz.

The coarse gold in this specimen is easily distinguished both in the quartz and in the laminations, and the quartz is curiously banded by streaks of more transparent silica, the bands or streaks being parallel, marking, perhaps, stages in the deposition of the reef.

324. Footwall, two specimens.

The total crushings of stone to August, 1884, are 2,242 tons, which yielded 3,343 oz. 5 dwt. gold, equal to 1 oz. 9 dwt. 19 grs. per ton. The first transaction recorded is as follows:—111 tons 10 cwt. for a yield of 389 oz. 10 dwt. of gold; price, £3 14s. 10d. per oz.*

Queensland Commissioners CARDIGAN.

325. Hanging wall, from 120-feet level.

326. Three specimens of auriferous quartz, 120-feet level.

327. Footwall.

Total crushings of stone to August, 1884, are 1,455 tons 2 cwt., which yielded 1,633 oz. 10 dwt. gold, equal to 1 oz. 2 dwt. 11 grs. per ton. The value of the gold appears to be low—only £2 11s. 5d. per oz.*

Queensland Commissioners CALEDONIA.

328. Country rock, 200 feet below surface.

329. Auriferous quartz, with iron pyrites; the iron pyrites also carries gold.

The total crushings are 2,301 tons 15 cwt., which yielded 3,044 oz. 11 dwt. gold, equal to 1 oz. 6 dwt. 10 grs. per ton. The highest value recorded is 56 tons, which yielded 123 oz., at £3 13s. 5d. per oz.*

Queensland Commissioners GOING HOME.

330. Auriferous quartz, yields by crushing about 1 oz. to the ton.

Queensland Commissioners TYRCONNEL.

331. Hanging wall.

332. Auriferous quartz, from 490-feet level.

333. Two specimens of footwall.

The total crushings are 10,875 tons 14 cwt., for a yield of 17,494 oz. 10 dwt. 18 grs. gold, an average of 1 oz. 12 dwt. 4 grs. per ton. The highest value recorded is:—40 tons for 107 oz. 5 dwt., valued at £3 7s. 4d. per oz. The very large quantity of stone crushed from this claim shows its importance; nearly £60,000 worth of gold has been taken out of the mine.

Queensland Commissioners BISMARCK

334. Four specimens of auriferous quartz.

Mr. Gold-Warden Towner, Thornborough.

334x. Surface stone.

* Mr. Jack's Report.

Queensland Commissioners HERO P.C.

335. Hanging wall, 100 feet below surface.

Mr. Gold-Warden Towner, Thornborough.

336x. Auriferous quartz.

Taken from the 70-feet level; the specimen exhibits coarse gold in the coarsely crystalline quartz.

337. Four samples auriferous quartz.

338. Country rock.

339. Footwall, two specimens.

Queensland Commissioners EXPLORER.

340. Auriferous quartz, surface.

341. Country rock; the pyrites is non-auriferous.

Mr. Jack says of this reef:—"Strike north 6 degrees east; underlie west 6 degrees north at 65 degrees. This may be taken as a type of the reefs, which do not coincide with the strike of the country rock. It was abandoned shortly after October, 1880. At 14 feet the reef was 2 feet thick at south end of shaft; at 3 feet north of north end of shaft the reef 'cut out,' but the gold continued in clay leaders; at the depth of 30 feet the reef was $3\frac{1}{2}$ feet thick, but was almost all shaly gangue. The engine shaft is 80 feet vertical and 57 feet on the underlie; at 25 feet down the underlie a drive has been carried 33 feet north. Here the last payable quartz was obtained. A drive was made to the north from the foot of the underlie shaft; but although it was carried 67 feet—*i.e.*, beyond where the rich stone should have come—it was not met with. . . . Quartz was obtained . . . carrying 2 dwt. to the ton."

The total crushing up to June, 1880, gave the following returns:—629 tons 5 cwt. yielding 2,804 oz. 18 dwt. gold, equal to an average of 4 oz. 9 dwt. 4 grs. per ton.

The only record of value of gold from this reef mentioned by Mr. Jack is:—60 tons yielded 401 oz. 17 dwt.; value £3 3s. 5d. per oz.

It may be mentioned that last year Mr. Nicholls, a miner, seeing gold in a lump of quartz weighing about 1 cwt., which was lying on surface at the Explorer mine, then abandoned, broke up the quartz and obtained about 5 oz. of gold therefrom. He has since obtained from the same place about 20 oz. more, and has 15 tons of good stone on grass awaiting crushing. A short time ago Mrs. Nicholls picked up, near the same place, a piece of quartz, weighing about a quarter of a pound, and containing $\frac{1}{2}$ oz. of gold. I cite this to point out that exploration has not exhausted the field, even at surface.

Queensland Commissioners PIONEER.

342. Hanging wall, showing non-auriferous pyrites, from 60-feet level.

343. Two specimens of auriferous quartz; 60-feet level.

344. Footwall.

The total crushings are—1,865 tons 5 cwt. for a yield of 3,543 oz. 7 dwt., equal to an average of 1 oz. 18 dwt. 1 gr. per ton.

Mr. Gold-Warden Towner, Thornborough CAPTAIN COOK.

344x. Auriferous quartz.

Queensland Commissioners CHANCE TUNNEL.

345. Country rock.

346.

" " This tunnel is near the northern boundary of the township of Thornborough, and is being driven by Mr. Murphy (single-handed), an experienced miner, who has worked at the tunnel for over three years; the object is to cut the Chance and other parallel reefs in the Pig Hill. "The locality is a mile south of the conglomerate in Glen Mowbray, and the strata cut occupy an horizon which may be estimated at 4,620 feet below that of the conglomerate. They consist for the most part of dark-blue shales (commonly but improperly known as slates), with alternations of hard gritty greywackes and a few bands of fine conglomerate. The fine-grained greywackes yielded a fossil which is in the Brisbane Museum, having been pronounced by Mr. C. De Vis, the curator, to be *Lepidodendron*, probably *L. australe* of McCoy. I found among the shales numerous casts of crustacean or molluscan tracks, some reed-like plant impressions and a fragment of carbonised wood." *

This tunnel has been driven for 273 feet, and is 6 feet high by 3½ broad.

Mr. Gold-Warden Towner, Thornborough HOME RULE.

346x. Auriferous quartz.

Queensland Commissioners TICHBOURNE.

347. Hanging wall, from 230-feet level.

348. Footwall, from 230-feet level.

349. Three samples auriferous quartz, from 60-feet level.

The total crushings are 926 tons for a yield of 1,726 oz. 5 dwt., equal to an average of 1 oz. 17 dwt. 6 grs. per ton.*

The sketch in the Appendix shows the occurrence of the shoot of auriferous quartz. It began at 53 feet down the

* Mr. Jack's Report.

underlie shaft. In a drive to the south at the 155-foot level it was 30 feet to the outer edge of the shoot; a little deeper the shoot had passed out of the shaft to the north. The shaft was continued 100 feet further on the underlie (to east 15 degrees north at 45 degrees); a vertical shaft was sunk which cut the reef at 110 feet deep, 25 feet to the north of the underlie shaft at the 155-foot level, and was continued on the underlie to 130 feet. But below the point where the vertical shaft 'bottomed' on the reef, the stone shortly died out. . . . It may be inferred with confidence that the shoot of stone was about 64 feet in width, and extended downwards to about 170 feet. The underlie shaft of the Tichborne is only 50 feet from the point where the cap of the reef intersects the cap of the Pioneer reef. The latter is not traced beyond this point, but the Tichborne is continued as the True Blue to the north. It appears, therefore, that the Tichborne (which crosses the strike of the strata) displaces or is newer than the Pioneer (which coincides with the strike of the strata)."*

Queensland Commissioners **DAGWORTH MINE.**

349A. Tailings.

349B. Auriferous quartz, 75 feet below surface.

Queensland Commissioners **HOMEWARD BOUND.**

349C. Country rock.

349D. Auriferous quartz; typical specimen of stone as raised for crushing.

349E. Auriferous quartz, showing a fair sprinkling of coarse gold.

A specimen of quartz from this mine is exhibited under the magnifying apparatus. Total crushings are 5,546 tons for a yield of 6,674 oz. 8 dwt. of gold, equal to an average of 1 oz. 4 dwt. 1 gr. per ton.

Reef strikes east 20 degrees north, and underlies to south 20 degrees east, in dark shale country. The principal shaft is 210 feet down; the best "stone" occurred in the hanging wall. In places the quartz was upwards of 6 feet in thickness, but not rich. About 15 feet west of the bottom of the shaft a wedge-like body of quartz appeared and widened westward, till about 35 feet from the shaft it was 8 to 10 feet wide. Ten feet further the reef had thinned to 3 feet, with 18 inches of quartz between two bands of block "mullock" or gangue; from this point up to the shaft at the surface the "shoot" of stone had been continuously worked, and it had averaged $1\frac{1}{2}$ oz. to the ton. The "shoot" "dipped" to the west at an angle of about 1 in 4.

* Mr. Jack's Report.

Queensland Commissioners *UNION REEF*

349f. Country rock, 250 feet below surface.

349g. " " "

349h. Four specimens auriferous quartz, showing free gold, galena specks, mispickel, and sphalerite; the quartz is crystalline and laminated in part.

The gold is very good, the highest value being—171 tons stone, 305 oz. gold, value £3 19s. per oz. The total crushings are 9,051 tons 10 cwt., yielding 11,384 oz. 2 dwt. 12 grs. gold, equal to an average of 1 oz. 5 dwt. 3 grs. per ton.*

349i. Example of free gold (one speck is visible; the visitor's attention is called to an exhibit of this in the magnifying apparatus) in quartz, heavily charged with galena in specks; from the 110-foot level.

Mr. Jack says :—" In the east corner of the vertical shaft at the 200-foot level 18 inches of quartz are seen on the hanging wall. The total thickness of quartz and gangue at this place is $4\frac{1}{2}$ feet. Along the level the quartz averages 18 inches, although in one place it pinches to 6 inches. Midway between the vertical and the main shaft the 'formation' for a space contains no quartz at all. In the stope west of the main shaft and between the 200 and 270 feet levels there are from 9 inches to 3 feet of quartz seen on the face. Generally the lower portion, about 8 or 9 inches thick, of the quartz adjoining the footwall has a good deal of iron pyrites and yields better than the rest. The whole of the quartz, however, is crushed. Near the winze, below the 270-foot level, the reef has been quite 10 feet thick. In the winze, however, a break or slip is seen, which throws the hanging wall down against the footwall. Here there were about 2 feet of stone, with some visible gold. Six feet down the winze the stone on the left side was very poor. In 6 feet more, however, it improved greatly and gave much better promise. After a few feet more, where there is little quartz, a vein rises from the footwall and joins the hanging-wall vein, making 3 feet in all. At the bottom of the winze there are $2\frac{1}{2}$ feet of good stone on the hanging wall. To the east of the main shaft the "break" is seen all the way. It is nearly vertical, with a small quartz vein in one place. At the end, and about 30 feet down, the stone bulges, and may average 2 feet thick to the north of the break. On the east face of the stope, between the 200 and 270 feet level, about 1 foot of quartz is seen, on an average, perhaps one-third of which promises well. West of the vertical shaft the "break" is again seen at the 200-foot level. It appears to affect the hanging wall only. The underlie of the reef is

* Mr. Jack's Report.

about 45 degrees in the upper level, but not so great in the lower. The water level stands at about 300 feet (measured down the underlie). As seen in the tunnel the greywackes and shales strike north-west and south-east."

Mr. Gold-Warden Towner, Thornborough MONARCH.

349x. Auriferous quartz.

Crushings as follows:—5,065 tons 14 cwt. yielded 6,215 oz. 19 dwt. 19 grs., of which one crushing of 100 tons gave 78 oz. 14 dwt., valued at £3 11s. 1d. per oz.

Mr. Gold-Warden Towner, Thornborough MOUNT TRIAL.

350x. Crushed auriferous quartz.

This sample is exhibited to show how fine the stone has to be crushed in order to free the gold and insure its coming into contact with the quicksilver. The visitor's attention is directed to the crushing plant, where the whole process of gold "winning" is carried on just as it is in all goldfields.

NORTHCOTE.

Queensland Commissioners EMILY LEASE ANTIMONY MINE.

350. Three samples of stibnite (antimony glance, sulphide of antimony) from 76-foot level.

These are fine specimens of the kind of ore which is the source of nearly all the antimony of commerce.

351. Stibnite, in quartz.

This is an example of the occurrence in the quartz reef.

352. Country rock, 76 feet from surface.

353. Footwall, 26 feet from surface.

354. Footwall, adjacent to reef.

355. Footwall, showing minute cubes of iron pyrites.

The reef is at present worked for stibnite, as the specimens show, but it was originally opened as a gold-bearing quartz-reef, but the crushings were poor, the total crushings being 382 tons 12 cwt for a yield of 315 oz. 13 dwt. of gold. From the Annual Report of the Department of Mines for 1881-82, it appears that Mr. J. A. Parker, the local assayer, drew attention to the rich deposits. Messrs. Denny and Co. commenced preparations for the erection of antimony smelting works, but the real work of erection of plant, &c., was carried out under the direction of Messrs. Field and Son, for the Northcote Antimony Smelting Works Company. Mr. E. R. Field has experience in the metallurgy of antimony, and the works appear to be well laid out. The output for 1884—the year the company started—was 145 tons crude antimony, which was disposed of in the English market at £19 1s. 3d. per ton; 49 tons of white oxide were obtained from the chambers, which was reduced to 25 tons of regulus. The gross returns were about £3,500. The capital sunk on the works is about £6,000.

The specimens catalogued below will illustrate the process as carried out on these works :—

Queensland Commissioners...NORTHCOTE ANTIMONY SMELTING WORKS.

- 356. Crude antimony sulphide, resulting from smelting of ore, like exhibit No. 350.
- 357. Granulated crude antimony sulphide, made by drawing off the crude ore in No. 356 still molten into tanks of water.
- 358. White oxide of antimony, caught in chambers connecting furnaces with chimney-stack.
- 359. Crystals of white oxide of antimony, generally found adhering to walls of chambers nearest to the furnaces.
- 360. { Exhibit the ratio in which 357 and 358 are mixed with
- 361. { the charcoal to produce the antimony regulus exhibited in No. 362.
- 362. Antimony regulus.
- 363. * Slag containing antimony, produced in the preparation of the regulus.
- 364. * Yellow glass of antimony, found in the end of the flue nearest the furnace connecting chambers and furnace.
- 365. Antimony regulus.

Queensland Commissioners MINNIE MOXHAM.

- 366. Auriferous quartz.
 - 367. Auriferous quartz, 350 feet from mouth of tunnel.
 - 368. Average quartz, 450 feet " "
- The gold in this reef is very valuable. Mr. Jack's figures are—for the highest value, 123 tons, 282 oz. 16 dwt. gold, at £4 0s. 1½d. per oz.; and the lowest, 60 oz. 18 dwt. gold, sold for £3 19s. 3½d. per oz. The quartz is heavily charged in parts with specks of stibnite. Total crushings to December, 1883, 1,053 tons 10 cwt., yielding 2,112 oz. 3 dwt. of gold, on an average of just over 2 oz. of gold per ton.

Queensland Commissioners CRAIG'S LEASE.

- 369. Two specimens stibnite, 12 feet from surface.
 - 370. Two specimens stibnite, with quartz, 15 feet from surface.
 - 371. Stibnite, with quartz and slate.
- "This is a continuation of the Emily line of reef, distant about a mile and a half; the lode is about 2 feet wide; the strike is west 40 degrees north."†

* Percentage of antimony in these specimens will be given in the Appendix.

† Mr. Jack's Report.

"Gold occurs, associated with stibnite, at Cata Branca, Minas Geraes, Brazil; at Paciencia and Coelho, Minas Geraes, with tellurium and iron pyrites; with auriferous iron pyrites, and mispickel, at Gold Kronach, in the Fichtelgebirge, and in many of the Transylvanian gold ores. Sulphide and oxide of antimony with free gold are found at Heathcote, Whroo, Templestowe, Caledonia, Anderson's Creek, Donovan's Creek, in the basin of the Yarra, Rutherglen, Maryborough, Blackwood, Wood's Point, Maldon, Daylesford, Ballarat, and other Victorian localities. The gold and antimony yields of some samples are thus stated:—

Locality.	Variety.	Antimony.	Gold, per ton.		
		Per cent.	Oz.	dwt.	grs.
Ringwood ...	Sulphide ...	33	2	5	17
Costerfield ...	" ...	45	2	15	0
" ...	" ...	42	1	19	0
Stonehurst ...	" ...	63	1	10	0
Whroo ...	" ...	65	3	18	0
Costerfield ...	Oxide ...	36	1	10	16
Newcastle, N.S.W.	Sulphide ...	...	0	15	0

A vein of auriferous stibnite occurs at Langdon's Creek, near Grey-mouth, New Zealand,* which yields from a few ounces to 99 oz. of gold per ton, but, up to the present time these reefs have not received the attention they deserve, except at Reefton and a few other localities. Nine mining companies at Reefton divided during the single year ending March 31st, 1878, as profit the sum of £63,508 among the shareholders.†

RAVENSWOOD GOLD FIELD.

The official and commercial centre of the field is Ravenswood. Since December, 1883, it has been connected by rail with the port of Townsville. Charters Towers is the only other northern mining centre which enjoys a similar advantage. Within the first four weeks of the opening of the line 300 tons of pyrites were despatched over it for shipment to Europe.‡ It is possible now to get massive machinery on to the field, and to keep the reefs open by selling the pyrites for treatment in Europe; and though the time must come when the stuff will not have to travel 13,000 miles to be dealt with in Swansea, Freiberg, or Clausthal, yet it is satisfactory to read in the statistics of the field for the year 1884 that 622 tons of mundic quartz were despatched, which produced 3,603 oz., or nearly 6 oz. to the ton. The

* "Gold, its occurrence and extraction, 1882," A. G. Lock; page 839.

† Ibid, page 519.

‡ Annual Report of the Department of Mines, Queensland, for the year 1884, Published 1885.

problem of the treatment of pyritous ores is one that greatly interests Ravenswood, but, pending its solution, the field can now do very well by utilising the railway.

If all the gold, including 1885, that has been got or "won" from this field were to be melted and cast into a solid cube, it would be of the size of cube No. V., the statistics of which are printed thereon. The yield from 2,120 tons of the quartz first crushed from various claims on the field was 5,682 oz. gold, equal to 2 oz. 14 dwt. per ton; and the total yield for 1871 was 60,444 oz. gold.*

Most of the gold for the year 1885 has been got from quartz. The statistics are:—

Sources.	Alluvial Gold.	Quartz Crushed.	Produce in Gold.	Average per ton.
	Oz. dwt. grs.	Tons. cwt. lbs.	Oz. dwt. grs.	Dwt. grs.
Ravenswood Mills ... ..	...	12,434 10 2	7,875 16 3	
Fanning Reefs ... ..	...	145 9 6	349 4 0	
Mundic quartz shipped ...	...	622 0 1	3,603 0 0	
		13,201 19 9	11,528 0 3	17 22
Banks' purchases	2,014 0 0	}		
Chinese alluvial, sold outside the field	350 0 0		2,364 0 0	
Grand Total, 1884 ...	...	...	14,192 0 3	

The question of how the gold occurs in these mundic or pyrites ores appears still unsettled. General opinion is in favour of its being metallic, but "Professor E. J. Chapman, of Toronto, asserts that the gold is present as an arsenide in the mispickel of North Hastings. At the same time microscopic examination shows the gold to be in an extremely finely-divided state; and the evidence of Cosmo Newbery and Skey is to the effect that much of it is coated with a film of pyrites so thin as to make no appreciable difference to the colour and lustre of the metal, yet sufficient to prevent its contact with the mercury, even after grinding has dissociated 'mineral' from the matrix. The want of uniformity in the opinions of the best authorities would seem to indicate that there is something yet to learn on this question of the nature of the association of the gold."†

A few analyses of the pyrites of the more important reefs have been added and compared with Professor Newbery's and others' analyses of Australian pyrites. (*Vide* Appendix.)

The gold appears to occur with the following minerals, which are distributed in great abundance and generally in well-defined lodes:—

Galena
Chalcopyrite
Marcasite
Pyrrhotite

Sphalerite
Mispickel
Stibnite.

* Daintree, Geology of Queensland. "Journal of the Geological Society, 1872."

† "Gold: its Occurrence and Extraction," A. G. Lock, 1882, p. 1105.

This last is not so abundantly distributed as the former minerals. The country rock is entirely confined to syenitic granite. The analysis gives the following results* :—

Silica	...	...	...	...	60.066
Alumina	...	...	...	...	21.180
Ferrous oxide	...	...	...	...	5.533
Lime	...	...	...	...	4.833
Magnesia	...	...	...	...	2.073
Potash	...	...	...	...	2.120
Soda	...	...	...	...	2.233
Water (constitution)	...	...	...	...	1.305
Water (hygroscopic)	...	...	...	...	0.650
					99.993

Its contained minerals were triclinic felspar, quartz, brown mica, and a little hornblende, though some of the syenitic granites from the same locality have a much larger percentage of hornblende. This was a typical specimen of the hornblendic granites, largely developed in various localities in Queensland, which evidently have been formed by chemical and mechanical changes from stratified sedimentary rocks, as evidenced by the occasional bands of mica and other schists observed in them at intervals.

Mr. Daintree proceeds to point out with reference to this particular field that there is no evidence of trappean action (intrusion of trap rocks, dykes of diorite, like the great diorite dyke that stretches for miles through the Palmer, &c., &c., into the Hodgkinson†) influencing the production of veins, or, if there be, it is deep-seated; and there is, therefore, this practical difference to be borne in mind when considering the mode of occurrence of metallic minerals in Queensland, viz., that in the fossil-bearing palæozoic equivalent of the Devonian no case has yet been observed (1871) free from trappean disturbance where paying quantities of metallic ore or metal have been found; whilst in the metamorphic areas (like Ravenswood) this has not been shown to be an absolute necessity. Quoting Mr. Aplin, the late Government Geologist for Southern Queensland, Mr. Daintree continues: "In the metamorphic system, indeed, is the most varied development of metallic ores in Queensland; in it also the greatest number of 'true lodes' have been found; and this fact affords the best reason for the supposition that the comparatively unexplored districts at the head of the Mitchell and in the McKinlay ranges, where large tracks of metamorphic rocks are known to exist, will yet add very much to the mineral exports of Queensland when thoroughly prospected."

In the Annual Report of the Department of Mines, 1884-85, Mr. Gold-Warden Archibald winds up with the following paragraph:— "Nothing can be more discouraging to the miners, to possess quartz known by fire-assay to contain 5 oz. to 10 oz. to a ton, which when treated at local batteries produces only 2 oz. The producer of

* Daintree, Geology of Queensland. "Journal of the Geological Society, 1872."

† Mr. Falconer states that he has traced this dyke.

machinery who can successfully cope with our mundic ores will not only reap large profits, but he will do incalculable good to this important mining centre by enabling many dormant holdings to be reopened and worked, thereby leading to the field's solid and lasting prosperity."

The following tables for the years 1883 and 1884 are taken from the same source:—

Gold.		Silver-Lead.	Tin.	Copper.	Value.		
	Oz. dwt. grs.	Tons.	Tons.	Tons.	£	s.	d.
1884—	14,192 0 3	...	...	...	48,252	16	1
		1,035	...	...	23,185	5	2
		...	27	...	1,134	0	0
		...	...	2	17	2	0
Totals ...	14,192 0 3	1,035	27	2	72,589	3	3
1883—	13,000 0 0	...	...	...	44,200	0	0
		411	...	...	12,492	0	0
		...	25	...	1,000	0	0
Totals ...	13,000 0 0	411	25	...	57,692	0	0

There are two energetic companies at work on the question of how to utilise these rich deposits. The Ravenswood Gold Smelting Company, who started with Mr. Barton as their manager, in endeavouring to produce an auriferous copper matte, used a Pacific Smelter as a furnace, and succeeded in producing a matte, which, on the average, assayed as follows:—

Gold	...	...	...	...	27 oz. per ton.
Silver	...	...	...	...	5 " "
Copper	...	...	...	...	12 per cent.

But the process was abandoned for the present scheme, which is, to smelt galena (a mineral abundantly distributed in the field) with the calcined auriferous pyrites, producing an auriferous silver-lead in pigs, which could, of course, be treated locally with the greatest ease. Several tons of alloy, rich in precious metals, have been already produced, and the visitors' attention is called to the trophy exhibit of these pigs of auriferous silver-lead.

Messrs. Wagemann and Gilchrist are the other party whose work is very certain, although, of course, it would be more satisfactory if the work could be done locally. This company dress their pyrites ores by a system of jigging which avoids crushing the whole matrix and mineral to fine dust, at the same time accomplishing a perfect "cleansing" of the "mineral" from the gangue. The dressed ores are then shipped to Germany for treatment in the Government works. Messrs. Wagemann and Gilchrist have secured several mines, and their returns are very handsome. The railway now renders it possible to ship ores home that two years ago would have remained *in situ*: but the business requires capital, and can only be worked in the manner that this company have initiated. The average miner cannot afford to wait several months for his returns, continuing the output all the time.

The population of Ravenswood is shown in the following table:—

DISTRIBUTION OF ESTIMATED POPULATION, RAVENSWOOD GOLD FIELD AND MINING DISTRICT, 31st December, 1884.*											
EUROPEAN MINERS.					Other Persons.	Grand Total European Population.	CHINESE MINERS.			Grand Total Chinese Population.	
Total Miners.				Quartz.			Alluvial.	Others.			
Quartz.	Alluvial.	Other Minerals.									
Ravenswood	...	70	...	...	1,000	1,070	2	20	10	122
Sandy Creek	...	65	...	...	120	185	...	40	3	43
One-Mile	47	87	...	...	...	...
Sellheim River	8	23	...	...	...	...
Stone's Creek	30	...	...	...	...
Trieste Camp	...	11	...	...	13	24	...	42	...	42
Strathalbyn	...	2	...	...	3	5	...	...	...	...
Hillsborough	5	...	5	
Kirk	...	8	...	...	8	16	...	...	4	4
Rochford	12	12	...	...	...	...
Mount Wright	6	9	...	...	...	...
Holmsdown	...	5	...	...	10	15	...	...	...	...
Blackfellow's Creek	...	9	...	...	...	9	...	...	...	...
Fanning Reefs and Star River	...	6	...	...	4	10	...	6	...	6
Keelbottom Copper Mine	2	8	...	...	...	...
Argentine	7	12	...	...	2	2	
Running Creek	6	...	...	...	...
Kangaroo Hills	2	5	...	...	...	...
Ravenswood Junction and Branch Railway	200	200	...	...	3	3	
Dotswood	9	9	...	...	...	...
Ravenswood Station	6	6	...	...	2	2	
Range Hotel	5	5	...	...	...	...
		176	80	78	284	1,462	1,746	2	113	114	229

Total, 1,975 souls.

*Annual Report, Mines Department, 1884-85.

TOTAL, 1,975 souls.

* Annual Report, Mines Department, 1884-85.

The return of machinery in the district is as follows :—

RETURN of all MACHINERY on RAVENSWOOD GOLD FIELD and MINING DISTRICT, 31st December, 1884.*

	No. of Engines.	Horse Power.	No. of Stampers.	Winding Gear.	Pumping Gear.	Barrels.	Wheeler's Fans.	Concentrators.	Arrestors.	Reverberating Furnaces.	Grinding Barrels.	Buddles.	Jiggers.	Stone-breakers.	Pairs Rollers.	VALUE, 1884.	VALUE, 1883.	INCREASE FOR 1884.
																£ s. d.	£ s. d.	£ s. d.
Quartz Crushing Machinery	15	146	95	.....	10	13	2	3	2	1	6	.....	.....	.....	.....	20,550 0 0	30,080 0 0	1,570 0 0
Machinery on Claims and Leases	17	136	.....	17	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,080 0 0		
Silver and Copper Machinery	7	102	.....	3	4	.....	.....	.....	.....	.....	.....	1	1	2	.....	16,800 0 0		
	39	384	95	20	20	10	13	2	3	2	1	6	1	1	2	48,430 0 0	40,960 0 0	7,470 0 0

Queensland Commissioners ... { RAVENSWOOD GOLD MINING AND ORE
CONCENTRATING WORKS.

372. Hand-picked auriferous iron pyrites (39 pieces).
373. Hand-picked auriferous sphalerite.
374. Roughs (Cornish "skimpings"). Jigger No. 1, assays 20 oz. gold per ton.
375. Hutchwork, jigger No. 1—*i.e.*, the finer-divided ore which has passed through the meshes of the jigger.
376. Tailings from treatment of 375.
377. Dressed tailings, awaiting German Government report.
378. Dressed tailings, coarse.
379. Dressed sphalerite.

Queensland Commissioners HILLSBOROUGH.

380. Specular iron-ore. *Firsts*.
381. Specular iron-ore. *Seconds*.

Queensland Commissioners HECTOR.

382. Hanging wall, 85-feet level.
383. "Horse" in reef, 30 feet from surface.
384. "Horse" in reef, 56 feet from surface.
385. Auriferous iron pyrites in lode formation *above* water-level.

* Annual Report, Mines Department 1884-85.

386. Auriferous iron pyrites and sphalerite, in lode formation
below water-level.
387. Auriferous sphalerite and iron pyrites.
388. " " " in quartz.
389. " " iron pyrites, and chalcopyrite; assays
29 oz. 18 dwt. gold to ton.
390. Calcspar vein on hanging wall, from 85-feet level.
391. Iron pyrites and quartz crystals, found in drusy cavity at
55-feet level.
392. Specimen from drusy cavity.
393. Bulk sample of ore.
394. Country rock.
The lode is 15 inches wide.

Queensland Commissioners LONDON CLAIM.

395. Two specimens of crystals of iron pyrites, auriferous.
396. Auriferous iron pyrites, in quartz.
397. Decomposing iron pyrites and chalcopyrite, auriferous.

Queensland Commissioners CURRENCY LASS.

398. Iron pyrites, sphalerite, chalcopyrite, and galena, auriferous.

Queensland Commissioners.

399. Stibnite, specimen of ore found cropping out at surface, 4
miles east of Ravenswood township.

Queensland Commissioners BUCK CLAIM.

400. Two specimens malachite and black oxide of copper.
401. Auriferous sphalerite, iron pyrites, and mispickel, in quartz.

Queensland Commissioners ANGLETERRA CLAIM.

402. Auriferous chalcopyrite and iron pyrites, in quartz.
403. " " " in felspathic quartz.
These two claims are both on the Buck line of reef, and
the Angleterra specimens assay 2 oz. gold to the ton.

Queensland Commissioners... RAVENSWOOD GOLD-SMELTING COMPANY.

404. Specimen of limestone, quarried in the neighbourhood of
the township.
405. Two specimens limestone, as in 404, showing dendritic
markings of pyrolusite (?).

406. Ironstone (Mount Right).
 407. " "
 408. " (Ravenswood).
 409. " quarried by company's men.

The above are specimens of the kind of limestone and ironstone which the company use in their process for the smelting of the auriferous pyrites.

410. Copper matte, as produced in original process.
 411. Matte, by-product in present process, containing by assay the following:— $2\frac{1}{2}$ oz. gold and 50 oz. silver per ton, and 4 per cent. copper.
 412. Slag from present process.
 413. Matte.
 414. Coating found adhering to furnace below the water-jacket

The company appear to be doing well. The following was published in the *Brisbane Courier* of 23rd January, 1885:—

"Mr. A. Joske, managing director of the Ravenswood Gold Smelting Company, informs us that the company have three gold-mines on the field—namely, the Black Jack, covering 25 acres; the General Grant, 25 acres; and the Sunset, 11 acres. These mines are worked with the best machinery obtainable in England, turning out as much ore as is required for the smelters. Before being placed in the smelters the ore is 'concentrated' by machinery, after which it is put into a roaster, and when thoroughly roasted it is mixed with lead-ore and placed in the smelter. In this it produces a bullion containing lead, silver, and gold. When taken out of the smelter it is run into a refinery where the lead is separated from the gold and silver. The lead is used over again in working fresh ore. After the separation of the lead the silver and gold are ready for despatch to the mint. The small furnace used is a 25-ton one and is worked for copper. It produces about 5 tons of copper matte a day, containing gold and copper. After the matte gets through the furnace it is thoroughly roasted and again sent back to the furnace, with other ore, till it produces about 30 oz. gold showing 40 per cent of copper. Both furnaces are in capital order, and the roaster, battery, and refinery are working well. This machinery is amongst the most successful of the kind working in the colonies, and it is capable of turning out between £600 and £700 in value daily of gold, silver, and copper."

Queensland Commissioners POLITICIAN.

415. Galena and iron pyrites.
 416. Galena and iron pyrites, in quartz.
 417. Two specimens galena, iron pyrites, and chalcopryrite, with quartz and steatite.

418. Galena, iron pyrites, and chalopyrite, from centre of lode.

The two specimens are from the 100-foot level; the lode here is from 2 to 3 feet thick. Attention is called to Messrs. Donald Brothers' private exhibit from this reef.

Messrs. Donald Brothers { POLITICIAN CLAIM, Sandy Creek, Ravenswood, Northern Queensland.

418i. Sample from centre of mine, 333-foot level.

418ii. Sample of stone or quartz from the 333-foot level.

418iii. „ stone or quartz from the 275-foot level.

418iv. „ surface stone.

418v. „ formation within walls, 350-foot level.

418vi. „ stone or quartz, 350-foot level.

418vii. „ the country where reef is found.

418viii. „ surface sinking.

418ix. „ sand from top riffle.

418x. „ amalgam.

418xi. „ retorted gold.

} From reduction works.

418xii. Seven samples of ore from the reef at various depths.

Queensland Commissioners SATISFACTION.

419. Brown hæmatite, 12 feet beneath surface.

420. Red hæmatite, surface.

This hæmatite is being raised for smelting purposes by a company which had not commenced operations when the mineral collector visited the field.

Queensland Commissioners KAY'S CLAIM.

421. Two specimens of argentiferous galena, 13 feet from surface.

Queensland Commissioners MARKHAM'S SILVER LEASE.

422. Two specimens argentiferous galena from the 120-foot level.

423. Country rock.

“The lease is being worked by *one* miner, who raised, during the year 1884, 26 tons of silver galena of the value of £702. His area is small—only 5 acres—but the quality of the mineral is good, realising £22 per ton.”*

* Mr. Gold-Warden Archibald, in “The Annual Report of the Department of Mines for the year 1884-85.”

441. Iron pyrites and chalcopyrite.

These three last specimens come from the 200-feet level, and are stated to be very rich in gold (which means for Ravenswood about 18 or 20 oz. per ton).

442. Sphalerite and chalcopyrite.

443. "Horse" in lode at 25 feet below surface.

444. Same "horse" at 200 feet, carrying some pyrites.

445. Country rock.

446. Specimen, showing in one piece the four sulphides—marcasite, chalcopyrite, sphalerite, and galena (in specks), as occurring in lode.

Ravenswood Gold Smelting Company.

The trophy of this company consists of ores, &c., as follows:—

VII. One ton of auriferous pyrites—General Grant.

VIII. Half-ton of auriferous pyrites—Sunset.

IX. One ton of auriferous pyrites—Black Jack.

X. Half-ton of ingots containing lead, silver, and gold.

New England Mundic Company, Limited, exhibit as a trophy—

One ton of auriferous pyrites.

Queensland Commissioners MR. D. McRAE'S CLAIM.

Four bags of concentrated gold ores:—

XI. Jigged ore—Black Jack.

XII. From tyes—Melaneur Junction.

XIII. Hand-picked blende—Hector.

XIV. Finest jigged ore—Hector.

The Commissioners exhibit this trophy, as the dressing of pyritic gold ores prior to shipping to Europe is a new departure on Ravenswood Gold Field.

Queensland Commissioners LONDON No. II.

447. Auriferous iron pyrites and chalcopyrite, in quartz and brown hæmatite.

Queensland Commissioners HANNAN'S LEASE.

448. Auriferous iron pyrites and sphalerite.

449. " " " with steatite.

Queensland Commissioners ... RAVENSWOOD GREAT EXTENDED.

450. Argentiferous galena, in felspathic quartz.
 451. " " iron pyrites, and sphalerite, occurring
 in layers alternately with country rock.
 451A. Iron pyrites and sphalerite.
 452. Country rock.

Exhibited by themselves ... { RAVENSWOOD GREAT EXTENDED S. M. Co.,
LIMITED.

- 452A. Stephanite (?), weighing 2 cwt. 1 qr., coming from a
 vertical depth of 650 feet beneath surface.

This class of ore assays from 500 to 5,000 oz. silver per ton. The particular specimen is exhibited as a trophy, and is said to assay 2,000 oz. silver. (A complete analysis is given in the Appendix.)

Queensland Commissioners ... RAVENSWOOD S. M. Co., LIMITED.

453. Dressed ore. Best sulphides, galena, and iron pyrites.
 454. " " second tye, galena, and iron pyrites.
 455. Coarse slimes, galena, and iron pyrites.
 457. Third tye, galena, and iron pyrites.
 458. Prill ore.
 459. Dressed ore } carbonates and sulphides.
 460. Second tye }
 461. Third tye.
 462. Slimes.
 463. Sludge, slimes; pit No. 1.
 464. " " " No. 2.
 465. Country rock.
 466. Surface blow of lode.
 467. Galena and iron pyrites, in calcite and quartz, from footwall
 of lode.
 468. Iron pyrites and galena. These two specimens come from the
 centre of the lode.
 469. Iron pyrites, galena, and quartz crystals.
 470. " " chalcopryrite, and sphalerite, with calcspar in
 drusy cavity containing iron oxides.
 471. Three specimens of argentiferous galena, cropping out at
 surface in company's ground.

The lode is parallel to the main reef.

472. Three specimens of galena and carbonates of lead, iron, &c.; assays 350 to 400 oz. silver and 2 oz. gold per ton.

473. Two specimens of cerussite and decomposing galena.

The white crystals are cerussite, which is a native carbonate of lead. Next to galena, cerussite is the most common ore of lead, but owing to its white colour impurities are more observable in cerussite than galena—iron gives a dirty-yellow colour, and copper a dirty-green. The piles from which these samples were taken assay from 180 oz. to 300 oz. silver per ton.

Exhibited by themselves RAVENSWOOD S. M. CO., LIMITED.

XV. Block of argentiferous galena, assaying 66½ per cent. of lead; 158 oz. 8 dwt. 16 grs. of silver.

Queensland Commissioners GENERAL GRANT.

474. Mispickel, in quartz, with iron pyrites and chalcoppyrite; two specimens from 400 feet underlie-shaft; the vertical depth would be about 300 feet.

475. Chalcoppyrite and sphalerite.

476. Quartz reef running across lode, nearly at right angles.

477. Country rocks.

Queensland Commissioners SUNSET CLAIM.

478. Iron pyrites and mispickel.

479. Mispickel and chalcoppyrite (peacock variety).

480. Chalcoppyrite.

481. „ and sphalerite on calcspar.

482. Calcite footwall.

483. Country.

Queensland Commissioners JACKSON'S LEASE.

484. Three specimens of ferruginous argentiferous plumbic ore. The ore carries about 5 dwt. gold per ton.

Queensland Commissioners... .. GENERAL GORDON.

485. Argentiferous galena.

Queensland Commissioners HORNING'S LEASE.

486. Argentiferous galena, from main shaft, 70 feet from surface.

Queensland Commissioners TRIESTE.

487. Argentiferous galena, decomposed.

488. Argentiferous galena.

Mr. Gold-Warden Archibald states this sample assays over 100 oz. silver per ton of galena.

Queensland Commissioners ELLEN ROSS.

489. Four specimens of galena and chalcopryite (peacock variety), which yield by crushing 4 oz. gold per ton. From the 80-foot level.

Queensland Commissioners PYRAMID LEASE.

490. (An analysis of this exhibit will be found in the Appendix.)

Queensland Commissioners BIRTHDAY GIFT.

491. Galena, sphalerite, chalcopryite (peacock variety); from 4 feet beneath surface. This ore assays 113 oz. silver per ton.

Queensland Commissioners BONNIE DUNDEE.

492. Two specimens of galena and sphalerite, assaying 100 oz. to the ton.

Queensland Commissioners AUSTRALIA FELIX.

493. Iron pyrites, in quartz; assays 7 oz. gold per ton; from the 100-foot level.

494. Iron pyrites and mispickel, very rich; assays 18 to 20 oz. gold per ton.

Queensland Commissioners SELLHEIM RIVER.

495. Fine-grained galena, very rich in silver, nearly 200 oz. per ton.

496. Sphalerite, iron pyrites, chalcopryite (peacock variety), and galena.

497. (An analysis of this specimen will be found in the Appendix.)

Ashton Bros. SELLHEIM RIVER.

XVI. Specimen of galena; weight, 6 cwt. 2 qrs. 22 lbs. (An analysis of this specimen will be found in the Appendix.)

Queensland Commissioners OUTSIDER No. 1 NORTH.

498. Hanging wall permeated with iron pyrites, non-auriferous.

499. Two specimens of auriferous iron pyrites, as occurring in lode formation; assaying 9 oz. gold per ton.

500. Specimen from centre of lode, carrying gold and silver, with iron pyrites.

501. Country rock.

CHARTERS TOWERS GOLD FIELD.

The official and commercial centre is Charters Towers. Since it has been connected by rail with the port of Townsville, it is the most important and most successful field in Queensland, except perhaps Gympie, which is a much older field. The field was discovered early in 1872 by Messrs. H. Mosman, C. E. Clarke, and J. Fraser,* and proclaimed a goldfield on 31st August of that year. It includes an area of 1,700 square miles. The collection of reefs when mapped out on paper appear to follow a definite system; they form a sort of horseshoe bend with its convex side to the south, and underlie towards the centre of this curve at a low angle. At present, visible gold is a rarity in the reefs; but experience having shown what classes of stone yield most when crushed, the miner is in no way dispirited even if he never sees the colour in his workings. There is considerable monotony in the underground operations, which display the same country, the same gangue, and the same phenomena, at and above the water-level.*

Mr. Gold-Warden Sellheim says "that the great solidity of Charters Towers must be ascribed to the fact that nearly all the interest is owned on the field. That the absence of extraneous monetary help has been freely experienced during past years, now and then, goes without saying; but it is satisfactory to think now, that the apparently formidable obstacles in developing the mines have been overcome principally by local enterprise, and that the rewards go to local shareholders.

"The capital required in mining here is becoming greater, year by year, and it may be said that successful operations have grown beyond individual effort now. Combination must henceforth take the place of the individual in the majority of ventures if this field is going to have a chance of displaying its wonderful resources to their full extent.

"Comparing the present with the past, it is patent that the field is steadily progressing. The quantity of auriferous quartz raised is increasing from year to year, and the average yield per ton is now within a shade of 2 ounces. In the earlier days of the field it was between $1\frac{1}{2}$ and $1\frac{1}{4}$ ounces.

"The following particulars of depths show the work that has been done in sinking on the reefs of the field. In counting the 'straight' and 'underlie' together, they had in 1884—

1 shaft over 1000 feet	...	4 shafts over 800 feet
7 " 600 "	...	17 " 400 "
18 " 300 "	...	16 " 200 "

"The width of the reefs worked with profit varies from 6 inches to 19 feet.

"The rate of wages has undergone no alteration since my last report, and remains at £3 for $5\frac{1}{2}$ shifts for ordinary work, with

* "Report on the Geology and Mineral Resources of the District between Charters Towers Gold Field and the Coast," by R. L. Jack, Government Geologist, Northern Queensland.

proportionate increases for responsible or skilled positions, excessively wet work, or distance from town. There has been always a plentiful supply of men, and on occasions this has been more than sufficient for requirements, but good experienced men of the steady class have never been long out of employment. There is a matter in connection with the wages on this field that is always a matter of surprise to strangers, and that is the absence of classification. Truckers, and even fillers, unless they happen to be boys, as a rule get the same rate of pay as men working in the face. This, however, is quite a matter as between master and men, and must be satisfactory to both parties, as it never has been yet the cause of dispute, and I have only alluded to it as a matter of apparent anomaly.

"The mining interest held by companies is gradually increasing, as the subjoined table will show. There are 39 companies registered at present, and although the nominal capital is less than last year, it is very satisfactory to notice a considerable increase in the paid-up capital. I trust the day will not be far distant when every mine on the field will be owned by a company, so as to permit every workman to become a shareholder according to his means. That there is a difference in the amount and the quality of the work done by the man that works for a wage and the one who works for himself no reasonable person will dispute, and the fact of every miner becoming personally and materially interested in the field must tend towards its advantage. On no other goldfield in Australia, in proportion to the number of men employed, are wages-men without interest in such preponderance as here.

"COMPARATIVE TABLE of GOLD-MINING COMPANIES for 1883 and 1884.

Year.	CAPITAL.						Number of Shares.
	Nominal.			Paid-up.			
	£	s.	d.	£	s.	d.	
1883	907,500	0	0	366,441	0	0	916,500
1884	834,700	0	0	471,670	0	0	934,500

"There are four crushing plants on the Cape River Gold Field, comprising 24 stampers with engine power of 38-horse, but these have been idle during the year for want of payable stone.

"The crushing charges have been stationary, at from 12s. to 15s. per ton, and are likely to remain at that rate, as with the complete gold-saving appliances supplied by mill-owners here now the margin left for profit to the latter is anything but large. Many different opinions are continually expressed here relative to the actual amount of gold that is lost in the treatment of auriferous ore on this goldfield. That there should be a wide difference in these estimates is natural, as in matters of this kind those people that understand least of the matter are the most forward in speaking authoritatively on it; but in

taking the results of rational inquiries made by experts, and also reliable assays of the sands taken from below the machines, as the basis of my opinion, I am satisfied that the gold that escapes amalgamation, and is run away with the tailings now-a-days, does not exceed 15 per cent.”*

It appears to be undeniable that in this field, as in other auriferous pyrites regions, it is to a certain extent true that the surface of a reef is sometimes exceptionally rich in gold.

“The region of ‘brownstone,’ or pyrrhotite and peroxide of iron, coincides with that superficial part of the rock which is not permanently saturated with water and into which the atmosphere penetrates. A second region, that of ‘mundic,’ or auriferous sulphides, is co-extensive (so far as is yet known) with the zone of permanent saturation. The rainfall is understood to circulate ‘chiefly within a film of the rocky crust, not much exceeding 2,000 or 2,500 feet.’ (*Page’s Economic Geology.*)

“In the progress of denudation, the upper zone, which may be called the ‘zone of intermittent saturation,’ must necessarily invade the lower zone, that of ‘permanent saturation,’ while the lower limit of the latter will sink deeper into the crust of the earth.

“The ‘brownstone’ is ‘mundic’ which has undergone oxidation, the pyrites being altered to pyrrhotite, a change which can be produced artificially, as in the experiments of Rammelsberg and Berzelius. As, however, there is no reason to doubt that the gold exists in the mundic stone, it seems difficult to account for its greater abundance in the superficial brownstone.

“The simple explanation suggested by Mr. Belb, however, meets all the requirements of the case. On the denudation and oxidation of the upper portion of a reef, the gold with the denuded sulphides is set free and is carried, with the aid of rains and by virtue of its own high specific gravity, into the porous weathered upper part of the reef which is next in turn to undergo denudation; and it may thus happen that the ‘capping’ of a reef is enriched with loose gold. Add to this the ease with which surface stone is ‘raised’ as compared with deep levels, and it is evident that only the upper part of a reef may be payable.

“From an examination of specimens containing visible gold, I am inclined to think that the gold is not in chemical combination with the pyrites or the galena, but either exists in these minerals as an impurity, or has been rejected from them on their crystallisation.

“The property of substances on their crystallisation to throw out foreign bodies is well known, many important metallurgical processes being based on it.†

* Annual Report, Department of Mines, 1884-85.

† “Pattinson’s process for the separation of lead from argentiferous lead is an example where the molten mass is kept at a temperature just sufficient to allow the lead to cool and crystallise, while the more fusible alloy remains liquid; the solid crystals of nearly pure lead are ladled out, leaving the enriched and still molten alloy behind.

"At the same time the microscope has made evident, as analysis had already shown, that a chemically pure mineral is a rarity in nature.

"There is no reason to expect any material change in the nature of the reefs within the limits of the zone which the workings have now almost all reached (1878), viz., that of 'permanent saturation,' unless it be, perhaps, an increase in the quantities of heavy metals or ores—gold, silver, sulphides of iron, and perhaps of copper. Whether the source of the gold, &c., in the reefs was the adjacent 'country,' or whether the ore and metals were derived from below, the heavy precipitates from their solutions would tend to be deposited in the lower parts of the fissures more than in the higher. I do not mean to predict that every reef in the field will prove richer below than above, but the observation, I am firmly convinced, will be true of the field as a whole. Admitting that the granite rocks in a region of low rainfall may not be permanently saturated below 2,000 feet, it will be seen that the workings have hardly yet reached one-fifth of this depth. It must, therefore, be some time before the question of the continuance of the gold below the limit of 'permanent saturation' can be put to the test." *

The visitor to Charters Towers will be surprised at its prosperity. From the railway station to the town the broad, well-kept road is lined on either side with houses; cabs and omnibuses ply in the streets; numerous telegraph wires are carried overhead. Public buildings, schools, churches, banks, hotels, &c., are numerous. The electric light is employed in some of the larger companies' reduction works; and yet, in 1872, there was no vestige of civilisation on the field; now, the population is stated to be something under 10,000. Charters Towers has the thriving air of an inland town; ordinary mining townships have a very temporary look.

The following table, taken from the Annual Report, Mines Department, Queensland, 1884-85, shows the machinery and its value, as at present erected on this field:—

GOLD FIELD.	STEAM ENGINES.																		VALUE.				
	Crushing.		Winding.		Stampers.	Weight of Stampers.	Bordans.	Ruddies.	Wheeler's Pans.	Settlers.	Furnaces.	Concentrators.	Amalgamators.	Percussion Tables.	Chilian Mills.	Saw Mills.	Steam Pumps.	Winding Gear.		Pumping Gear.	Rock Drills.	Winches.	Whips.
	No.	H.P.	No.	H.P.																			
Charters Towers	16	341	61	665	202	5 cwt.	122	12	71	24	3	26	5	2	...	3	3	50	22	2	13	18	£ 150,715 0 0
Cape River ...	4	38	...	...	24	5 to 10	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	5,300 0 0
Total ...	20	379	61	665	226	...	123	12	71	24	3	26	5	2	1	3	3	50	22	2	13	18	£156,015 0 0

* "Report on the Geology and Mineral Resources of the District between Charters Towers Gold Field and the Coast," by R. L. Jack, Government Geologist, Northern Queensland.

CHARTERS TOWERS.

Year.	Stone Crushed.	Yield of Gold from Crushing.	Average of Gold per ton of stone.	Tallings treated per ton of stone.	Yield of Gold Tallings per same Return.	No. of Miners Rights Issued.	No. of Miners Working Quartz.	Greatest depth of payable gold. Feet.	Greatest depth of any vertical shaft. Feet.	No. of Miners Working Alluvium.
1872	12,054	20,063 19 5	1 14 5	...	...	2,303	2,000	50	120	800
1873	37,937	59,885 0 0	1 11 13	...	...	2,418	850	75	120	50
1874	33,097	52,872 14 21	1 11 23	...	...	1,717	1,200	150	150	50
1875	36,376	62,214 0 0	1 13 17	...	...	1,859	1,030	226	225	30
1876	37,500	58,068 2 10	1 10 23	1,525	799 0 0	1,224	1,140	250	230	130
1877	36,030	66,479 3 16	1 16 22	2,978	1,799 14 0	1,286	1,100	420	240	20
1878	35,509	53,340 6 19	1 10 1	?	18,848 13 5	933	1,012	...	...	...
1879	41,584	63,567 8 6	1 10 13	?	19,707 11 18	1,157	1,020	...	...	...
1880	39,285	68,593 16 20	1 14 22	?	16,704 3 4	1,360	1,070	...	...	120
1881	45,378	69,263 9 1	1 10 12	?	13,060 10 23	1,395	1,110	...	...	225
1882	45,662	79,495 17 2	1 14 9	?	*1,898 2 22	1,526	1,250	...	...	50
1883	44,602	68,599 0 0	1 10 17	?	956 0 0	1,354	1,000	...	...	75
1884	52,568	106,236 18 9	2 0 10	?	3,098 1 15	1,286	1,120	...	†590	...
†1885	...	134,650 0 0	...	...	...	...	...	...	...	...

These figures are taken from
Mr. Jack's Report.

These figures are compiled from
the Annual Reports of the
Department of Mines for
the several years 1878-84.

* The great drop here was doubtless occasioned by the large companies, such as Day Dawn, dealing with their own tallings.

† Hope Mine, published by order of Legislative Assembly, 22nd October, 1884, in conjunction with the depths of deepest gold-mines on each of the following fields—Cymple, Charters Towers, Ravenswood, Hodgkinson, Palmer, and Etheridge.

‡ The other statistics are not yet to hand for 1886.

Queensland Commissioners EASTWARD HO.

510. Country rock.
 511. Footwall, showing non-auriferous iron pyrites from the 520-feet level.
 512. Footwall, showing non-auriferous iron pyrites from the 600-feet level.
 513. Country rock, 520 feet.
 514. Auriferous quartz.
 These two specimens come from 600-feet level, and exhibit specks of galena.
 515. Auriferous quartz, with crystals of iron pyrites.
 516. Auriferous quartz, with iron pyrites and galena, from 520-feet level.

H. Mossman, Esq., Managing Director { EASTWARD HO AND NORTH AUSTRALIAN.

XVII. Bulk specimens auriferous quartz, from vertical depth of 450 feet.

The strike of this reef, and all others in this field, is shown in the diagram at the end of the catalogue.

The claim is on the Wyndham reef, and is from 1 foot to 18 inches in width. The last crushing to hand, July, 1885, was 236 tons of quartz for a yield of 1,840 oz. of gold. The figures given in the report of Mr. Gold-Warden Sellheim, and published by the Mines Department for 1884-85, are :—

Area.	Stone produced.	Yield.	Average.	Total sinking, underlie.
A. E. F.	Tons.	Oz. dwt. grs.	Oz. dwt. grs.	
12 2 39	460	1,535 14 7	3 16 18	670 feet

The lease is held by the Mossman Gold Mining Company.

Queensland Commissioners QUEEN LEASE No. 2, S.W.

517. Country rock, from 370-feet level.
 518. Iron pyrites and galena, in quartz, auriferous.
 519. Footwall.
 520. Two specimens galena and iron pyrites, auriferous, from the 250-feet level.
 521. One specimen " "
 522. Two specimens galena and iron pyrites in quartz, rich in gold, from the 370-feet level.

523. Two specimens of dyke traversing reef.

Mr. Gold-Warden Sellheim's figures for this lease are* :—

Area.			Stone produced.	Yield.	Average.	TOTAL SINKING.	
						Straight.	Underlie.
A.	B.	P.	Tons.	Oz. dwt. grs.	Oz. dwt. grs.	Feet.	Feet.
9	1	6	4,992	10,072 6 0	2 0 8	260	280

The reef is from 6 inches to 2 feet in width.

S. W. Queen G. M. Co., Limited ... S. W. QUEEN Nos. 1 and 2

XVIII. Six bulk samples of quartz, obtained from vertical depth of 300 feet.

Queensland Commissioners ... ALEXANDRA HILL G. M. Co.

524. Sphalerite, iron pyrites, and chalcopryrite, in quartz, from 300-feet level.

525. Iron pyrites and specks of mispickel, in quartz, from 300-feet level.

526. Iron pyrites and mispickel, in quartz, from 510-feet level.

527. Galena, chalcopryrite, and specks (peacock variety), from centre of lode at 320-feet level.

528. Iron pyrites and galena, in quartz.

529. Galena and iron pyrites, the latter in crystalline groups.

530. " " " from 320-feet level.

531. Auriferous quartz, carrying 3 oz. 2 dwt. per ton, from the 420-feet level.

It is stated that this claim alone has yielded nearly 50,000 oz. of gold.

T. Buckland, Managing Director... ... ALEXANDRA GOLD MINE.

XIX. Bulk samples of auriferous quartz and sulphides, obtained from a vertical depth of 200 feet.

VICTORY G. M. Co., LIMITED.

XX. Ten bulk samples of auriferous quartz and sulphides obtained from a vertical depth of 360 to 460 feet.

Queensland Commissioners ... MOUNT DEVONPORT, Lower Cape River.

532. Two specimens auriferous mica slates.

533. Four " " "

* Annual Report, Department of Mines, for the year 1884-85.

Queensland Commissioners UPPER CAPE RIVER.

534. Specimens of country rock, carrying nearly 2 dw. gold to the ton.

These specimens were given to the mineral collector by Mr. Gold-Warden Sellheim, more to exhibit the country rock than as mineralogical specimens.

Queensland Commissioners QUEEN LEASE, No. 6, N.E.

535. Iron pyrites and galena, in quartz, at 300-foot level.

536. Iron pyrites and galena, in quartz; the pyrites is in very fine grains on surface of quartz.

537. Specimen shows two surfaces covered with fine grains of iron pyrites on ordinary coarse-grained galena and pyrites.

It is found that this finely-divided iron pyrites carries more gold than the coarser varieties.

538. Iron pyrites, in quartz, at the northern level, 300 feet.

North Queen G. M. Co., Limited.

- XXI. Six bulk samples of auriferous quartz, from vertical depth of 450 feet; also wall rocks and granite samples.

Mr. Gold-Warden Sellheim's figures for 1884-85:—

Area.	Thickness of Reef.	Stone produced.	Yield.	Average.	TOTAL SINKING.	
					Straight.	Underlie.
A. R. P.	From 6 in. to 1 ft.	Tons cwt. lbs.	Oz. dw. grs.	Oz. dw. grs.	Feet.	Feet.
24 1 16		2,397 7 0	7,505 17 0	3 2 14	320	200

The lease is on the "Queen" line of reef.

Mr. Jack's remarks about the line of reef.—" bears N.E. and S.W. with an underlie of 30 degrees to N.W. The "Queen" may be said to be a cross-course, situated as it is in the middle of a cluster of reefs bearing N.W. and S.E., and underlying to the N.E. In the "Queen" generally, the quartz veins penetrate the footwall—a circumstance which is almost peculiar to this reef, and was understood to indicate the presence of a parallel reef below. A drive was accordingly made bearing S.S.E. from the end from the 340-foot long level, and the hanging wall of another reef was reached at a distance of 63 feet. A dyke of porphyry, or perhaps more properly syenite, runs S.E. through the 'country,' but

has not been seen in the reef itself. Could we be certain that the dyke does not cut the reef the inference would be justifiable, that the fissure in the granite now filled up by the reef was made *after* the injection of the dyke; and that in fact this reef is one of the latest formed in the field, the others being, as a rule, intersected by and consequently older than the porphyry dykes. Sections of the rock forming the dyke in question, on being examined under the microscope, show a matrix of felspar a good deal coloured with chlorite, with blebs of clear quartz containing numerous fluid cavities. Small cubes of pyrites occur throughout the matrix as well as in the quartz."

Queensland Commissioners BONNIE DUNDEE.

539. Iron pyrites, sphalerite, and galena, in quartz, with steatite.

540. „ „ and sphalerite, in quartz and steatite.

541. Fine-grained pyrites and galena in quartz, with minute superficial calcite crystals, from the 200-foot level.

542. Country rock.

The total sinking is 200 feet straight and 500 feet on the underlie. It is held by the Bonnie Dundee Gold Mining Company.

Bonnie Dundee G. M. Co., Limited.

XXII. Various bulk samples of auriferous quartz and sulphides, from a vertical depth of 450 feet.

Queensland Commissioners DAY DAWN P.C.

543. Galena and iron pyrites, carrying about 2 oz. gold per ton, from 600-foot level.

544. Country rock.

545. Galena and iron pyrites (two specimens), from the 520-foot level.

546. Galena and iron pyrites in quartz.

547. Chalcopyrite, with specks of peacock ore and iron pyrites in quartz.

Day Dawn Prospecting Claim G. M. Co., Limited ... DAY DAWN P.C.

XXIII. Twelve cwt. of assorted samples of auriferous quartz and sulphides, obtained from a vertical depth of 560 feet.

XXIV. Bulk specimen of wall rock.

XXV. „ „ dioritic porphyry dyke.

Queensland Commissioners DAY DAWN BLOCK.

548. Hanging wall, 700-foot level.

549. Galena and iron pyrites in quartz.

550. "Formation" with portion of footwall attached, from the 740-feet level.
551. Auriferous galena and iron pyrites.
552. Footwall, at 700-feet level.
- 552i. Crushed quartz before treatment.
- II. Concentrated pyrites, from Brown and Stansfield's patent machine.
- III. Tailings of No. II.; No. II. having passed through Wheeler's pans.
- IV. Tailings of No. III.; No. III. having passed through Berdan's pans.
- V. Tailings thrown to pile from No. II.
- VI. Pyrites slimes from No. IV., Berdan's pans.

Thomas Mills, Esq. { DAY DAWN BLOCK AND WYNDHAM G.M. Co.,
LIMITED.

- XXVI. Bulk samples of auriferous and mundic quartz, obtained at various depths ranging from 500 to 600 feet vertical.
- XXVII. Bulk samples of white quartz, with free gold visible on faces.
- XXVIII. Sample of timber used as firewood.
- XXIX. Bulk sample of dioritic porphyry dyke.
- XXX. " " wall.

These two leases are without doubt the most important on the field; the two having yielded 46,087 oz. 2 dwt. 8 grs. of gold, while the rest of the field altogether only turned out 56,791 oz. 16 dwt. 1 gr. for the year 1884. The reef strikes nearly due east and west, and dips north 50 degrees. When the mineral collector went down the Day Dawn Block, the reef at the 770-feet level was over 18 feet thick, averaging, it was stated, about 2 oz. gold to the ton.

Warden Sellheim's figures are published in the Annual Report of the Department of Mines for the year 1884-85:—

—	Area.	Stone produced.	Yield.	Average.
	A. E. P.	Tons. cwt.	Oz. dwt. grs.	Oz. dwt. grs.
Day Dawn p.c. Lease	20 3 24	11,331 0	30,130 4 0	2 13 4
Day Dawn Block	25 0 0	7,255 10	15,956 18 8	2 3 23

The Prospecting Lease (p.c.) is 10 feet thick, and was 875 feet down on the underlie.*

* Fifty tons "stone" have been purchased by commission for crushing in machine at Exhibition.

Queensland Commissioners BRYAN O'LYNN.

553. Three samples of granite, in the joints of which are scales of iron pyrites, assaying about $1\frac{1}{2}$ to 2 dw. per ton.

Queensland Commissioners { CONTINONG, 80 miles from Charters Towers
up the Burdekin River.

554. Filigree gold in coppery quartz.

The specimen exhibited under the magnifying apparatus is perhaps more interesting.

Queensland Commissioners SUNBURST P.C.

555. Auriferous iron pyrites.

556. Sphalerite, galena, and iron pyrites in quartz, from 130-foot level.

557. Sphalerite, galena, and iron pyrites in quartz, from 190-foot level.

H. Mosman, Esq.

558. These handsome "specimens"* are two of the first found on the field in 1872.

The gold is "nuggety" and deposited on iron-stained quartz.

Queensland Commissioners SUNBURST.

559. Country rock at 130-foot level.

560. Iron pyrites in footwall.

561. Dyke crossing the lode formation.

Queensland Commissioners NORTH AUSTRALIAN.

562. Auriferous pyrites and galena in quartz, from the 600-foot level.

563. " " " " "

564. Three specimens of auriferous pyrites and galena in quartz, 500-foot level.

565. Auriferous pyrites and galena in quartz, 480-foot level.

566. Country rock, from 400-foot level.

567. Lode formation, showing crystals of pyrites not gold-bearing.

568. Dyke running across reef.

The lease is held by the Mosman Gold Mining Company. The last crushing before the mineral collector's visit was 250 tons for a yield of over 1,000 oz. of gold.

* A "specimen" on a goldfield means a stone showing gold freely, and in the state called "nuggety."

Warden Sellheim's figures for 1884 are published in the Report of the Mines Department for 1884-85:—

Area.			Stone Produced.	Yield.	Average.	TOTAL SINKING.	
						Straight.	Underlie.
A.	E.	P.	Tons.	Oz. dwt. gr.	Oz. dwt. grs.	Feet.	Feet.
24	3	27	1,664	3,571 0 0	2 2 22	145	350

Mr. Jack says, in his report published in 1879, before referred to:—"The North Australian penetrates both the syenite 'country' of the Towers Hill and the granite country to the north-west. The 'mundic' stone of this reef appears to be richer in galena than most of the others in the field. A perpendicular dyke of diorite, 5 feet in width, running east 15 degrees south, cuts the reef, and is believed to favourably affect the auriferous character of the mundic. There was very good stone (3½ to 4 oz.) above the dyke at the 235-foot level. Veins of gypsum occur on the sides of the dyke."

Queensland Commissioners OLD IDENTITY.

569. Two specimens of iron pyrites, from the 450-foot level, auriferous.

570. Iron pyrites, fine-grained, auriferous.

571. Country rock.

"Old Identity underlies to the north-west at 30 degrees. The width of the lode varies from a few inches to 4 feet, the gangue being quartz, with some carbonate of lime and some pyrites, also a little bismuth. Barytes occurs on joints in the granite walls. In No. 1 claim 130 tons crushed at the rate of 4 oz. 8 dwt. per ton. In the P.C. (prospecting claim) 2 oz. per ton are obtained. At the 130-foot level, between No. 1 and No. 2 claims, the reef is cut by a fault (greasy wall), heading a little to the east, and thrown down 6 feet on the side of No. 2. Rich mundic occurs in No. 1 claim in the neighbourhood of the fault, frequently containing visible gold. The reef divides into two or three veins on approaching the fault, and the quartz is crystallised—a somewhat rare circumstance in the reefs of this district. One quartz-vein, 3 to 12 inches wide, runs down into the slip, from which it appears that the main fissure had been first filled with its vein, and that the silica and other materials had consolidated before they were broken through by another fissure in which similar materials were again deposited and consolidated. The supply of vein materials in solution must, therefore, have been kept up for some time.

At the 200-feet level a dyke of porphyry, nearly vertical, runs west 20 degrees north through the reef. Above the dyke, in No. 1 claim at least, the quartz is rich in gold. It dies out at the east end, and is replaced by quartz reef in the same line. In No. 1 claim it runs into and seems to die out in the footwall. The shoots of quartz are said to run down the reef diagonally from south-west to north-east."*

Queensland Commissioners BLACK JACK, Broughton.

572. Auriferous sphalerite and iron pyrites, in quartz.

Queensland Commissioners OCCIDENTAL, Cape River.

573. Auriferous iron pyrites in quartz, carrying 2 oz. gold per ton.

574. Two specimens of auriferous calcite, carrying about 2 dwt. gold per ton.

Queensland Commissioners TUNNET CLAIM, Upper Cape River.

575. Dyke running north-east and south-west, carrying 4 dwt. gold per ton.

Queensland Commissioners BROUGHTON CONSOLIDATED.

576. Auriferous pyrites and galena, in quartz.

A. G. Charlton, Esq. MOUNT LEYSHON.

577. Auriferous ironstone.

578.

"The porphyry of the S. and W. portions of the Pyramid Range, of which Mount Leyshon is the culminating point, is intrusive in its origin, being forced, while viscous, by its own expansion and the pressure of superincumbent rocks into planes of weakness—one such was found at the junction of the granite and slate—and this weak part of the earth's crust was afterwards the scene of volcanic action on a large scale. What now remains is not the crater or lava of a superficial volcanic outburst, but the once deep-seated pipe or neck, or core, filled up with the fragmental matter which supplied the ashy outburst. The materials of this neck admitted passage of water, &c., bearing iron in solution. Gold follows the ores of iron in whatever form the latter may occur.†

Queensland Commissioners DISRAELI SYNDICATE.

579. Formation.

* Extract from "Mr. Jack's Report of the Geology and Mineral Resources of the District between Charters Towers and the Coast," published in 1879.

† Abridged from Report on Mount Leyshon, by R. L. Jack, Government Geologist,

580. Iron pyrites and galena, in quartz.

581. " " " lower level.

A. G. Charlton, Manager DISRAELI SYNDICATE G. M. Co.

XXXI. Bulk specimen of quartz.

Hope G. M. Co., Limited HOPE MINE.

XXXII. Eight bulk samples auriferous quartz, from vertical depth of 600 feet; also, wall rocks and granite samples.

DETAILS of BULK EXHIBITS of AURIFEROUS QUARTZ, LOCAL COMMITTEE.

Name of Mine where obtained.	Name of Lode.	Depth where obtained.	Remarks.
Craven's Caledonian	...	400	...
Columbia P.C. ...	Columbia ...	150	...
Mossman ...	Washington ...	150	...
Mexican ...	Mexican...	500	...
Sunlight ...	Sunlight...	40	Dyke rocks and mundie quartz.
Rainbow P.C....	Rainbow ...	500	...
Lady Maria G.M. Co.	Lady Maria ...	200	...
No. 6 Day Dawn ...	Day Dawn ...	...	Piece dyke rock, with quartz and mundie veins.
Broughton Consol ...	Esperanza ...	150	...
Dan. O'Connel ...	St. Patrick ...	600	Samples of the vein stone.
No. 3 Wellington ...	Wellington ...	200	Vein stone.
"	"	200	Sample of dyke rock.
No. 2 Wellington ...	"	200	" vein stone.
"	"	200	" dyke rock.
"	"	200	"
"	"	200	" (interior).
"	"	200	" granite country.
Rainbow P.C....	Rainbow ...	500	" vein quartz.
Young St. Patrick ...	Mystery...	100	"
Lady Maria Co. ...	Lady Maria ...	200	"
Sons of Freedom ...	...	100	"
Continong ...	Continong ...	40	"
Warrior ...	...	60	"
Just-in-Time Block ...	Just-in-Time ...	560	"
Livingstone Co. ...	Livingstone Bluff	150	"
Newton Butler P.C. ...	Newton Butler...	50	"
Barber's Claim ...	Washington ...	100	"
Hit-or-Miss ...	Identity ...	100	"
Black Jack ...	Black Jack ...	...	Geode, with sulphides imbedded in the quartz crystals.*

* The cavity is lined with opaque crystals of vein-quartz, and imbedded amongst the crystals are patches of sulphides.

The following table of the values of the gold on Charters Towers was published in Mr. Jack's Report. Mr. Thomas Buckland was the assayer, and the table was compiled from his notes:—

Reef.	MINT VALUE OF GOLD.	
	In Brownstone.	In Mundic.
INSIDE REEFS—	£ s. d.	£ s. d.
St. Patrick	3 9 2	3 5 2
North Australian	3 13 1	3 10 0
Just-in-Time	3 9 8	3 4 10
Queen	3 9 11	3 7 0
Rainbow	3 14 4	
"	3 11 0	
General Wyndham	3 12 3	
OUTSIDE REEFS—		
Rose, Shamrock, and Thistle	2 16 11	
Southern Cross	2 19 2	
Alexandra	3 6 8	
"	3 5 3	
Union Jack	3 15 6	
REEFS AT A DISTANCE—		
Bluff (Alice P.C.)	3 2 0	
"	2 8 10	
Seventy-Mile (Reef)	2 17 6	
Twenty-Mile, alluvial, heavy, nuggety ...	3 13 4	
Brook's, alluvial, finer, nuggety ...	3 13 0	

The alloy is silver with a little iron. Alluvial gold contains .003 of iron; crushed gold, '01—supposed to be derived from the stamps.

GLADSTONE GOLD FIELDS.

There are six distinct goldfields within its boundaries, viz. :—

Calliope	Kroombit
Norton	The Tableland
Cania	Longmore.

The town of Gladstone is most conveniently situated on the coast. It is a port at which steamers can call at any state of the tide; a group of small islands protect the harbour and add to a scene already picturesque. The town is built on a hilly promontory, so that the sea washes both sides. The total European population on the goldfields of Gladstone, by the latest returns of Mr. Gold-Warden McArthur, is given as 391, of whom 125 are miners; there was one Chinese alluvial digger.

The yield of gold from alluvial diggings was for the year 1884 583 oz., and from the quartz 1,550 cz.; so that the gross yield for the

year was 2,133 oz. The value of all the mining plant in these fields is only £2,650. There are thirty-six proven auriferous reefs. The average value per oz. of the gold "won" is stated to be £3 10s. per oz.

The average earnings per miner for the year 1884 from quartz reefing were £108 10s., and the average earnings per alluvial digger were only £33 19s. 5½d.

The Gold-Warden's report to the Commission winds up by stating that for the last three years this district has been suffering under a protracted drought, which has affected the mining returns most seriously, little or no prospecting having been done, and several times the crushing machines have been stopped for want of water. The following table of returns from the fields since the setting-in of the drought is kindly furnished by the same official:—

Year.	Gold from Quartz.	Gold from Alluvial.	Total Oz. Gold.
1880	...	...	3,430
1881	...	...	3,070
1882	...	...	3,581
1883	1,172	594	1,766
1884	1,550	583	2,133
*1885	1,803	97	972

* For nine months only.

NORTON GOLD FIELD.

Queensland Commissioners No. 1 SOUTH ADVANCE.

592. Auriferous iron pyrites and sphalerite, from 210 feet below the surface.

593. Auriferous iron pyrites and sphalerite, from 200 feet below the surface.

594. Auriferous iron pyrites and sphalerite in quartz, from 180 feet below the surface.

595. Auriferous iron pyrites and sphalerite in calcite, from 180 feet below the surface.

596. Country rock.

597. Calcite formation.

597A. Tailings.

Queensland Commissioners ADVANCE.

XXXIII. Auriferous mundic stone, from 300-feet level.

Reef is 15 inches wide at this point, both walls are of granite, and the "stone" averages nearly 2 oz. gold per ton of quartz.

Queensland Commissioners No. 2 SOUTH ADVANCE.

598. Auriferous iron pyrites, in lode formation.
 599. Calcite vein, from 215 feet below surface
 600. Auriferous iron pyrites, sphalerite, and galena, in quartz.
 601. Formation, carrying a few pennyweights of gold per ton.
 602. Auriferous iron pyrites, sphalerite, and galena.
 603. " " " " from 220
 feet below surface.
 604. Country rock.

ADVANCE P.C.

605. { Both these specimens contain gold, nearly 3 oz. per ton,
 606. { and the minerals are the same in number and kind—
 iron pyrites, sphalerite, and galena. The last specimen
 is tipped with calcspar.
 607. Quartz leader, carrying auriferous iron pyrites and sphalerite.
 608. Auriferous galena and iron pyrites, between calcite and
 quartz.
 In this specimen "the mineral" was *over* the quartz and
 under the calcite.
 609. Sphalerite, galena, and iron pyrites, with calcspar crystals on
 side.
 These crystals were protected by a drussy cavity, a portion
 of which was dressed off in preparing the specimen for
 exhibition.
 610. Hanging wall.
 611. Footwall side.

Messrs. W. Carmichael, Burns and Twigg, } ... ADVANCE P.C.
and B. Williams

- XXXIV. One block auriferous mundic stone, weighing 1 cwt.
 2 qrs. 16 lbs.
 XXXV. Group of blocks auriferous mundic stone, weighing
 8 cwt. 2 qrs. 5 lbs.

The above three claims are on the one reef, which runs north-east and south-west. No. 1 has sunk the shaft 210 feet; No. 2, 220 feet; and the prospecting claim is 320 feet down. The calcite-vein in the lode formation of this reef is well marked in the three claims.

With regard to the occurrence of the calcspar, Lock's* observations are—"That it appears to be Nicholas' opinion

* "Gold: its Occurrence and Extraction, 1882;" page 649.

that it will be found to occur commonly and in quantity as the reefs of Victoria are mined to greater depths, mentioning in support of this opinion that the mineral has been found in nearly solid quartz taken from 1,687 feet below surface in the Magdala Mine, Pleasant Creek; in compact quartz from 560 feet below surface in the Victoria Reef, Sandhurst; and it has been observed in quartz from the Garden Gully Reef, Hustler's, and Brown's; 'lava dyke,' on the Johnson's, at Sandhurst; in a 'lava dyke' associated with the Wattle Gully Reef, Castlemaine; and in all these mines at considerable depths. It has also been found (in quantity) in the Shamrock Claim, Goolley's Creek, and other Gippsland mines. The calcite observed in the quartz from the Magdala Mine and the Victoria Reef occurred in thin veins in compact quartz, and was only discovered after careful examination; in some of the other cases mentioned it was found in cavities. In the 'lava dykes' it sometimes occurs in thick seams." What the effect will be on the auriferous character of reefs appears to be a matter of conjecture with the author, as it has not yet been found to exist to any large extent in reefs down to 1,000 feet. On the other hand, in the St. John del Rey Mine, Morro Velho, Minas Geraes, Brazil, calcspar has been found in "vughs," at a depth of 1,700 feet, which is distinctly non-auriferous. Calcite is associated with gold in Brazil and Virginia. "It has been observed by Von Cotta that lime is generally conspicuously absent from rocks associated with gold; on the other hand, in New South Wales (Nundle and Denison, Upper Peel and Hunter Rivers), the auriferous veins are composed rather of calcareous than siliceous minerals, and have been yielding gold for over twenty years. Two localities in the Sierra Nevada, California, are recorded as having gold in calcite or dolomite. Auriferous quartz-veins in Dog Island, Manitoba, are in dolomite."*

Gold is found associated with calcite in the Palmer (*vide* specimen No. 31), also on the Rosewood Gold Field in the Rockhampton district. The deep leads of the Lachlan, Australia, are opened on the flanks of a limestone belt; nuggets of gold, weighing from 2 to 9 oz., are frequently obtained from these leads, enveloped in what appears to be a decomposed silicate of lime. There was a cavern found in the limestone, 60 feet wide and 120 feet long, full of ordinary washdirt. There are five or six specimens from Gympie in the mineral collection of the Brisbane Museum which show fine nuggety gold in calcite. Many of the rich quartz reefs on the Gympie Gold Field occur with strong veins of calcite, and patches often richly impregnated with gold.

* "Gold: its Occurrence and Extraction," 1882; Lock, p. 840.

Queensland Commissioners **HICKEY'S REEF.**

- 612. Iron pyrites and sphalerite in calcite.
- 613. Auriferous surface stone, with crystals of fluor spar.
- 614. Shows iron pyrites, galena, and sphalerite in quartz. Parallel to this is a calcite vein, with a thin layer of quartz which interposes between the calcite vein and the hanging wall of the lode.

The reef is parallel to the "Who'd-a-thought-it" Reef, 5 or 6 chains north. The shaft is 40 feet down.

Queensland Commissioners **"WHO'D-A-THOUGHT-IT."**

- 615. Calcspar, at 336 feet below surface.
- 616. Quartz "leader" running parallel with reef at 250 feet below surface.
- 617. "Formation" main reef—calcspar, iron pyrites, galena, and sphalerite—from 300-foot level.
- 618. Auriferous quartz and calcspar crystals, from 120 feet below surface.
- 619. Calcspar and quartz, carrying auriferous pyrites adherent to hanging wall, from 336 feet below surface.
- 620. Quartz-vein joining main reef, with crystals, quartz, galena, and iron pyrites.
- 621. Quartz stringer to main reef, carrying auriferous pyrites.
- 622. Dyke parallel to reef, at 250 feet below surface.
- 623. Country rock.
- 623A. Tailings.

This reef runs east and west. The main shaft is about 336 feet down. According to Mr. Gold-Warden McArthur's report, 600 tons of quartz have been crushed, 453 tons yielding, on the average, 35 oz. to the ton, and 147 tons, from a "mullocky" leader, averaging 10 oz. to the ton.

Mr. McArthur states that 31.5 tons of tailings were sent to Sandhurst, Victoria, for treatment at the Pyrites Works; the total yield was 135 oz. 18 dwt.

Queensland Commissioners **FRAMPTON'S UNITED MINES.***Little Wonder Claim.*

- 624. Four specimens auriferous iron pyrites.

Frampton's Shaft.

625. Auriferous spongy silica, from 20 feet below surface.

The silica has rectangular cavities, not spheroidal like the siliceous sinters of a hot spring.

Mr. Gold-Warden McArthur FRAMPTON UNITED.
625x.

The exhibitor notes as follows:—"This reef is a large mundic vein and splits in places into three or four veins; they are formed by 'horses' in the throat of the upcast. These specimens are taken from places where the splits take place, and are like pumice-stone, they are so light. I have tried a number of these varieties—for they are of all colours—and they are richer than the main reef. . . . The lighter the specimens the richer the return for gold."

626A. Auriferous spongy silica.

627. Auriferous spongy silica, 15 feet below surface.

628. Auriferous spongy silica, from west wall of lode.

629. Three samples of auriferous iron pyrites and sphalerite, from 96 feet below surface.

630. Formation, from 96 feet below surface.

631. Iron pyrites, from 65 feet below surface.

632. Two specimens of iron pyrites and sphalerite, from 65 feet below surface.

Martin's Shaft.

633. Three specimens of auriferous quartz, stained with copper, from 25 feet below surface.

634. Three specimens of iron pyrites and sphalerite, auriferous.

Never Never Shaft.

635. Mispickel and iron pyrites, 99 feet from surface.

636. Iron pyrites and mispickel; the black decomposing pyrites is naturally the richest for gold.

637. Two specimens of iron pyrites and mispickel, in quartz. The same decomposition of iron pyrites is exhibited here as in the last specimen.

638. Fine-grained mispickel, in quartz.

Goody's Shaft.

639. Auriferous pyrites and sphalerite, with a few quartz crystals.

640. " " and galena.

641. " " sphalerite, and galena.

642. Three specimens of auriferous ochre, said to be rich in gold.

The following are the analyses of auriferous pyrites from this company's claims by Messrs. Johnson, Matthey, and Co.:—

Auriferous Pyrites from Goody's Reef.

Iron ...	...	...	...	...	30·60
Lead ...	...	...	...	...	8·90
Zinc ...	...	...	...	...	6·00
Arsenic ...	...	...	...	...	1·55
Copper ...	...	...	...	...	0·95
Sulphur ...	...	...	...	...	36·00
Alumina ...	...	...	...	...	0·40
Siliceous insoluble matter ...	...	...	...	...	15·20
Gold, silver, oxygen, and loss	...	...	...	...	0·40

	Oz.		100·00
Produce of gold ...	2·400	} Per ton of 20 cwt. of ore.	
„ silver ...	14·700		

Sample from Frampton's Claim.

Iron ...	...	...	...	...	25·10
Lead ...	...	...	...	...	1·10
Zinc ...	...	...	...	...	7·60
Arsenic ...	...	...	...	...	6·80
Sulphur ...	...	...	...	...	25·70
Copper ...	...	...	...	...	0·65
Alumina ...	...	...	...	...	0·20
Siliceous insoluble matter ...	...	...	...	...	32·60
Gold, silver, oxygen, and loss	...	...	...	...	0·25

	Oz.		100·00
Produce of gold ...	5·500	} Per ton of 20 cwt. of ore.	
„ silver ...	4·700		

Sample Auriferous Pyrites from Never Never Claim.

Iron ...	...	...	...	...	41·30
Arsenic ...	...	...	...	...	2·10
Copper ...	...	...	...	...	1·20
Lead ...	...	...	...	...	0·20
Sulphur ...	...	...	...	...	33·40
Moisture ...	...	...	...	...	1·00
Siliceous insoluble matter ...	...	...	...	...	17·40
Gold, silver, oxygen, and loss	...	...	...	...	3·40

	Oz.		100·00
Produce of gold ...	3·200	} Per ton of 20 cwt. of ore.	
„ silver ...	8·500		

This group of properties is held by a company who intend treating the pyrites ores by chlorination or some modification of that process. A good deal of the spongy quartz (50 or 60 tons) was crushed, and the average yield was nearly 4 oz. The specimens called spongy silica are indeterminate, as the constituents are variable, but the hollow spaces are not spherical; they have possibly been filled at one time with crystals of minerals that have weathered away, leaving the

casts behind. Until more work has been done in the way of developing the mine, it is difficult to state exactly what action has taken place.

Messrs. Conran and Richardson FRAMPTON UNITED.

XXXVI. One block auriferous mundic stone, weighing 4 cwt. 2 qrs.

XXXVII. Group of auriferous quartz blocks, weighing 10 cwt. 2 qrs. 4 lbs.

Queensland Commissioners { TIPP STONE, 25 miles SW. of Gladstone.

643. Jasperoid rock.

Queensland Commissioners KROOMBIT GOLD FIELD.

644. Surface stone with copper stains; yields, by crushing, 4 oz. gold per ton.

Queensland Commissioners CANIA GOLD FIELD.

645. Auriferous copper oxide.

Mr. Gold-Warden McArthur says of these fields that they lie "one on the north and the other on south side of the Dawes Range, respectively, or perhaps, more correctly, they are on the range, and for many miles beyond the limits of the fields the leaders carry copper and gold. They were opened out in 1870. Carriboe Creek, on the Kroombit, turned out great quantities of alluvial gold, and on the Four-mile and Eight-mile Creeks in Cania Gold Field rich claims were worked. The most valuable claims were on Moonlight Gully, Cania, where the majority of the claims averaged each £600 for eighteen months. When the reefs began to be worked, Mount Rose Prospecting Claim and Mount Rose No. 1 came to the front, and for the last six years the Mount Rose No. 1 has been the most paying reef in the district, the shareholders having already netted £3,000 per share. The prospecting claim gave good returns for the first five years, but there is so much copper in the lode at the present depth that it no longer pays to work for gold."

The Gold-Warden goes on to state "that many of the reefs would pay at a depth, but as yet no capital has been expended on prospecting in deep ground." The riches of the field are very great, but there are so many other fields in more accessible neighbourhoods, that are paying and absorbing capital, that Cania is lost sight of by miners and capitalists. The mineral collector was unable to visit the district, which is another example of how serious a question to the well-being of a field is its accessibility. The average crushings of clean quartz have been over 2 oz. per ton.

The surface of the country is very hilly, and the soil is exceedingly rich, being either black or red volcanic. The climate is perfect, the elevation being from 1,500 to 2,000 feet above the sea-level. All fruits grown in temperate zones flourish on the Dawes Range slopes; and the water supply is plentiful, as the ranges bring down the rain.

THE TABLELAND DIGGINGS.—Following one of the spurs of the Dawes Range you come on to the "Coast Range," which rises to a great elevation at Mount Fuller's Hat and Mount Buckland—viz., from 2,000 to 3,000 feet high. Between these two mountains there is a tableland of rich black soil, and on the slopes on the coast and Fitzroy River sides there have been great quantities of alluvial gold got. Some gold-bearing leaders have been found, but, in the absence of water, no one has attempted reefing. The country is most beautiful, and looks like a rich reefing district; but the constant succession of dry seasons has retarded progress, at present there being no drinking water even. The Longmore is another goldfield utterly broken down for want of water.

CALLIOPE GOLD FIELD.

Queensland Commissioners **KELLY'S GULLY.**

646. Serpentinous slate footwall.

647. Two specimens of auriferous quartz, from 60 feet below surface.

648. Three specimens of auriferous quartz, from 20 feet below surface.

These five specimens of auriferous stone contain no visible gold, yet the crushings yield nearly 2 oz. gold to the ton. They are fairly typical, having been selected from a pile of about 2 tons. The claim is abandoned.

Queensland Commissioners **THERESA.**

649. Two specimens of auriferous quartz, from 15 feet below surface.

Queensland Commissioners **COMPANY'S REEF.**

650. Footwall, from 150 feet below surface.

651. Auriferous quartz, from 150 feet below surface.

This claim was a very important one, but it is abandoned. It is a strong reef of compact quartz which has turned out a quantity of beautiful "specimens," but the shafts are full of water now and the workings are completely deserted. The specimens were obtained from the hotel proprietor. Mr. Gold-Warden McArthur says of this field that it promised to be the best in the district, but when the miners had sunk below the water-level—50 feet—the water charges became too heavy. No proper pumping gear has been erected at all. Claim after claim was abandoned, and at the present time there is not one reef at work.

The soil is black, lightly timbered, and fit to grow anything. The Gold-Warden expresses his belief, after knowing the field for years, that, with pumping gear and machinery, the reefs would be remunerative if prospected to the depth of 100 feet.

Queensland Commissioners Gladstone Town.

652. Five specimens pyrolusite.

653. Botryoidal pyrolusite.

654. Picked up on seashore.

The analysis of this ore is given below. The waterworn piece of manganese was found by the mineral collector on an island about 1 mile east of Gladstone harbour.

The strike of the lode is nearly E. and W.

Messrs. Johnson, Matthey, and Co., of Hatton Garden, have analysed two samples of the ore for the proprietor, and Mr. H. Friend, senior, of Gladstone, sends the following copy of their certificate:—

Available peroxide of manganese	74.84	57.00
Protoxide of manganese ...	8.20	9.30
Oxides of iron	8.60	3.80
Alumina	2.80	2.00
Carbonic acid	traces.	
Sulphur	0.22	0.13
Water	3.80	2.70
Siliceous insoluble matter	1.10	25.00
Loss	0.44	0.07
	100.00	100.00

No gold or silver.

H. Friend, senior... .. { GATECOMBE HEAD, 9 miles
above Calliope Crossing.
Various samples of building stone. (*Vide* "Collection of Building Stones.")

XXXVIII. Two blocks manganese (pyrolusite).

XXXIX. Smaller fragments manganese.

J. Saunders Bell, Esq. GLADSTONE, Dumgree Station.

1376. Blocks granite. (*Vide* "Building Stones.")

1377. " " "

GOLD FIELDS IN ROCKHAMPTON DISTRICT.

Rockhampton is the official and commercial centre of this group of goldfields. It is a most important port, built on the banks of the Fitzroy River. According to the official statistics of the colony for the year 1884, its population is 11,442, and the mileage of streets is 76. The ratable property is £1,178,275. The streets are well laid out; there is a handsome suspension bridge over the river, and there are very substantial stone public buildings, banks, churches, &c., the freestone of the district making a most excellent and durable building stone.* The Central Railway terminus is in Rockhampton; 335 miles of railway are opened. Emerald Junction is 165 miles from

* Amongst the exhibits of building-stones are some cubes of the Stanwell freestone.

the terminus, and a branch line of 62 miles in length connects it with Clermont Gold Field. Mr. Gold-Warden Cribb winds up his report of the district for the year 1884-85 as follows* :—

"The only work of reducing stone during the year was at Mount Morgan, and there the proprietors decline to give any return. Nevertheless the return of gold under these circumstances is very satisfactory, being 22,158 oz. 5 dwt. 2 grs., as against 5,591 oz. for the year 1883; and the revenue returns are still increasing, being £771 10s. 6d., while last year they were only £601 9s. 6d., showing an increase of £170 1s., and this increase is all in the last six months—the revenue to the 30th June being £216 11s., while from that date to 31st December it came to £554 19s. 6d.

"The work in this office very much increased during the year, as no less than 190 new claims were registered as against 40 the year preceding, and out of that 190 reefs some 60 or 70 are said to be auriferous.

"This seems to be a startling statement, but is, as far as I can ascertain, perfectly true, and the reasons why our returns are not in proportion are: Want of capital to develop the wealth in our possession, *want of a practical mining population*, scarcity of water, the absence of crushing plant for the use of the public, and the immense extent of country over which the reefs are spread; and the difficulty is increased from the inaccessible nature of the country. . . . The mining population has largely increased, as the estimated number in 1883 was 382, while now it has risen to 682, or nearly double."*

In this district is the Canoona Field, which was the first goldfield opened in Queensland (1858).

Some of the alluvial gold on the Canoona is of the class called "black gold." It is coated with manganic oxide of iron.† The gold was found to follow the course of a dyke of serpentine. The drifts were derived from the degradation of serpentine.‡

Queensland Commissioners EMERALD JUNCTION.

658. Jasperoid rock, with colloid silica filling crevices.

The silica has been deposited under the same conditions as the silica in chalcedonies and agates.

Queensland Commissioners HIBERNIA CLAIM.

659. Auriferous chalcopyrite and galena in quartz, from 120 feet beneath the surface.

The reef runs NE., SW., and dips about 1 in 3. The width is 18 inches, and the yield by crushing has averaged 23 dwt. of gold per ton.

* Annual Report, Department of Mines, 1884-85.

† Lock—"Gold: its Occurrence and Extraction, 1882;" p. 842

‡ R. Daintree on Certain Modes of Occurrence of Gold in Australia, 'Geological Journal, 1878;" p. 437.

Queensland Commissioners MOUNT WHEELER.

660. Two specimens of asbestos adhering to country rock.

661. Asbestos.

In the official description of the minerals of New South Wales, by Professor Liversidge, of Sydney University, published by the Department of Mines, N.S.W., it is stated that gold is found associated with talc, asbestos, and serpentine, near Gundagai. Asbestos occurs with auriferous quartz in diorite at Gulgong, King's Plains, county of Phillip; also at Wentworth, county of Wentworth; Lucknow Gold Field, Icely, Trunkey, Cooloola, and Mount Lawson, in the county of Bathurst.

662. (An analysis is given in the Appendix.)

662A. Tailings.

Mount Wheeler is 18 miles from Rockhampton; the rock is serpentine; very rich specimens were obtained from this mine from time to time. Mr. Gold-Warden Cribb mentions a patch found in 1884.*

"Within a radius of 1 mile of Mount Wheeler, the serpentine is traversed by auriferous reefs, whilst the extension of the same band of serpentine over a large area beyond this contains no parallel to the auriferous area round the above-mentioned hill. The rock of Mount Wheeler itself has been analysed by the late Professor Thompson, of the Sydney University, and is as follows:—

Mount Wheeler 'Felsite.'

Undecomposed by H.Cl.				...	...	96.75
Decomposed				...	...	3.25
Undecomposed.				Decomposed.		
Silica	...	...	76.28	Silica	...	36.54
Alumina	...	...	12.64	Alumina	...	23.97
Ferric oxide	...	...	0.92	Ferric oxide	...	11.59
Ferrous oxide	...	...	0.85	Ferrous oxide	...	none
Lime	...	...	0.33	Lime	...	1.57
Magnesia	...	...	trace	Magnesia	...	trace
Potash	...	...	3.30	Potash	...	1.14
Soda	...	...	4.59	Soda	...	2.00
Water	...	...	0.16	Water	...	19.98
99.07				96.79		
S. Gr.				...	...	2.564.

"This rock rises abruptly to an elevation of 800 feet through serpentine, gabbro, and diallage rock. It is very close-grained and compact. Mr. Allport's microscopic examination gives the following:—This is a felsite or trachyte, and consists

* Annual Report, Department of Mines, 1884-85.

of a fine granular felspathic base, in which there are scattered groups of minute green grains and crystals of hornblende. Some 30 yards from the bluff face of the mount, the serpentine was found to contain gold sufficient in quantity to pay for mining to a depth of 20 feet below the surface; gold was also found even to a depth of 80 feet, but not in remunerative quantities. This was known as 'Black's Claim,' and it affords additional ground for believing that the intrusion of Mount Wheeler was an active cause in the mineralisation of the country around."*

Queensland Commissioners GOLDEN BAR, Rosewood.

663. Two specimens of country rock, from 95 feet below surface.

664. Two specimens of auriferous calcite.

665. Auriferous quartz.

666. Auriferous quartz and calcite.

The lode runs E. and W. The auriferous calcite comes from 86 feet below surface.

Queensland Commissioners ... KEPPEL BAY VIEW, New Zealand Gully.

667. Four specimens of iron pyrites.

The "stone" from the claim crushes just over 1 oz. of gold per ton; but the tailings assay 10 oz. 14 dwt. 7 grs. of gold and 1,300 oz. of silver per ton. It is stated that these tailings were washed down the creek for some time before the proprietors realised what they were losing. The advantage to the miner and the country at large of a rough knowledge of assaying is obvious. The miners who own the claim have been offered £12,000 for their mining rights to it. (Further remarks on the mineralogy and analysis of these samples are given in the Appendix.)

Queensland Commissioners ... WELCOME COMPANY, Morinish.

668. Auriferous iron pyrites and galena in quartz, from 310-foot level.

669. Auriferous iron pyrites in quartz, No. 2 shaft, 50 feet below surface.

670. Dyke.

This cuts off the reef running obliquely across it. (An analysis is given in Appendix.)

671. Country rock.

671A. Pyrites tailings.

671B. Tailings.

* Daintree, Geology of Queensland. "Proceedings of the Geological Society," vol. xxviii., pp. 304, 306: 1872.

Queensland Commissioners ... HIDDEN TREASURE, New Zealand Gully.

672. Two specimens of auriferous quartz, from 54 feet below surface, yielding by crushing 2 oz. gold per ton.

673. Auriferous quartz, surface; yields by crushing 3 oz. of gold per ton.

The reef runs E. and W., and dips N. 1 in 15.

Queensland Commissioners ... MARY FLORENCE.

674. Sphalerite, iron pyrites, and chalcopryrite in quartz, from 75 feet below surface.

675. Auriferous pyrites, in quartz, from 30 feet below surface.

676. Auriferous quartz, with slight stains of copper carbonate.

677. "Formation."

The sample of gangue comes from 75 feet below surface.

678. Country rock.

679. Auriferous iron pyrites, in quartz leader, from 75 feet below surface.

Queensland Commissioners ... SALVATION ARMY, New Zealand Gully.

680. Auriferous iron pyrites, in quartz, from 32 feet below the surface, yielding by crushing 4 oz. gold per ton.

681. Auriferous iron pyrites, in quartz, from 15 feet below surface.

The stone from this claim, on an average, yields by crushing 2 oz. gold per ton.

Queensland Commissioners ... BAND OF HOPE, New Zealand Gully.

682. Auriferous quartz.

Keppel Bay, Hidden Treasure, and Band of Hope are claims all on one reef. It is about half-a-mile from the North Star line of reef. A good deal of work has been done on the several claims. The reef is over 12 inches thick. The crushings have yielded hitherto nearly 2 oz. gold per ton.

Rockhampton Local Committee ... STANWELL, Rockhampton.

1379. Two blocks Stanwell sandstone. *Vide* "Building Stones."

1380. Two " " " "

Rockhampton Local Committee... GLENMORE QUARRY, Rockhampton.

1378. Two blocks marble. *Vide* "Building Stones."

The quarry is 4 miles above Rockhampton, on the Fitzroy River.

J. R. Clark ISLAPORE, Rockhampton.

XLI. Rough blocks of magnesia (?).

This is not a pure magnesite, but the complete analysis is given in the Appendix.

Queensland Commissioners ... { CALEDONIAN G. M. Co.'s LEASE, at
Rosewood.

683. Ironstone, surface.

684. Hanging wall, from 10 feet below the surface.

685. Auriferous iron pyrites, with quartz and calcite formation.

686. " " " from 75 feet below
surface.

687. Two specimens of footwall.

The Caledonian and the Golden Bar are the two principal claims on the field. Rosewood is 60 miles west from Rockhampton. The Caledonian reef is about $1\frac{1}{4}$ feet wide, running east and west, and dipping 85 degrees north. The shaft is about 70 feet down. The last crushing was of 5 tons, which averaged 1 oz. 16 dwt. gold per ton.

Rosewood has been noted for nuggets. Mr. Gold-Warden Cribb remarks that during the year 1884 a number of very rich patches of alluvial gold had been discovered, some nuggets having been got on the surface weighing 3 and 8 oz. and as high as 18 oz., the deepest part of payable ground being only 18 inches. This is the only ground now being worked for alluvial gold around Rockhampton.*

The occurrence of calcite in the reefs is of interest. Allusion was made thereto in the notes on the Norton Gold Field.

Queensland Commissioners { WINDSOR G. M. Co's LEASE, Crocodile
Creek.

688. Auriferous iron pyrites, in quartz, with formation.

689. " " in dyke.

690. " " in quartz.

The formation is at present 16 feet wide; at 130-feet level a drive has been made of 60 feet east from the foot of the shaft. The porphyry dyke runs east and west. The average yield, by crushing, of 150 tons of "stone" was 7 dwt. gold per ton. The "clean" pyrites is stated to assay per ton at the rate of 9 oz. gold.

Queensland Commissioners ... NORTH STAR REEF, New Zealand Gully.

691. Two specimens of auriferous iron pyrites, in quartz, adhering to country rock, from 40-feet level.

* Annual Report, Department of Mines, 1884-85.

692. Quartz, with cavities originally occupied by auriferous iron pyrites, from 70-feet level.

The sulphide of iron has oxidised to soluble sulphate and disappeared, leaving the gold behind finely divided, with some oxide of iron.

693. Two specimens of iron pyrites and quartz, from 40-feet level.

694. Country rock, from 50 feet below surface.

695. " " 90 " "

North Star G. M. Co., Limited. } NORTH STAR REEF, New Zealand Gully.

XL. Ten blocks auriferous quartz, weighing 1 ton 5 cwt.

Queensland Commissioners UNION G. M. CO.'S LEASE.

696. Auriferous iron pyrites, in schorl and calcite, from 172-feet level.

697. Two specimens of auriferous iron pyrites, in schorl, from 172-feet level.

698. Auriferous iron pyrites, in schorl, with calcespar crystals.

699. Country rock.

700. Auriferous iron pyrites and schorl, in "formation."

701. Three specimens of iron pyrites crystals, in "lode formation," from 172-feet level.

702. Auriferous chalcopryite.

703. Auriferous iron pyrites, in granite, from Alabama shaft, 50 feet below surface.

"The Union Mill cleared up a small crushing of 36 tons from the Company's Alabama line on Saturday last, the result being 11 oz. 7 dwt. 20 grs. of retorted gold, or about 6 dwt. 8 grs. to the ton.

"The pyrites is poor in this lease, like its neighbouring lease, the Windsor, but the quantity of stone makes up for the quality. The average yield of 158 tons by crushing was 7 dwt. gold per ton of stone."*

"Auriferous reefs occur in tourmaline porphyry on the Normanby Gold Field."†

"Gold occurs with tourmalines, rubies, and zircons, in the Ayakta alluvium in Russia. Also in the Victorian deep leads and reefs."‡

* Rockhampton *Morning Bulletin* of 19th January.

† Mr. Jack's Report on Normanby Gold Field, 1879.

‡ Lock—"Gold: its Occurrence and Extraction," 407.

Queensland Commissioners HIT OR MISS P.C., Crocodile.

704. Auriferous pyrites, in quartz, from 150 feet below surface.

705. Country rock, from 150 feet below surface.

706. "Casing," or "dig"—a soft argillaceous deposit commonly found in mines between the vein or lode and the country rock wall.

706A. Tailings from the berdan pans.

706B. „ from stampers.

The reef runs north and south, and underlies to the east in the ratio of nearly 1 : 3. The quartz reef has a layer of pink orthoclase on one side of the lode adjacent to the wall; but whether this is true throughout the run of the reef is uncertain, as the manager had not observed it; neither can the mineral collector state whether it occurs on the footwall or hanging-wall side of the reef. The tailings from the berdan pans are being reserved for future treatment. The last crushing yielded 30 oz. of gold from 20 tons of stone.

Queensland Commissioners GREENVALE G. M. CO. LEASE.

707. Two specimens of auriferous rock, stained with copper, from 133 feet down the underlie shaft.

708. (A complete analysis is given in the Appendix.)

There is no distinct lode formation in the ground at all. The following returns have been furnished:—77 tons yielded by crushing an average of 11 dw. gold per ton of stone; 46 tons yielded an average of 9 dw.; and 26 tons an average of 10 dw. of gold per ton of stone. The underlie shaft is at an angle of 45 degrees to the horizon.

Queensland Commissioners CHAMPION CLAIM, Dee River.

709. Iron pyrites and chalcopyrite (peacock variety). It is stated that the pyrites yields by assay 19 oz. of gold per ton.

Queensland Commissioners NIAGARA FALLS CLAIM, Crocodile.

710. Four specimens of auriferous sphalerite, in quartz, from 28 feet below surface.

711. Country rock.

Queensland Commissioners HOMEWARD BOUND, Blackfellow's Gully.

712. Auriferous quartz.

713. Three specimens of auriferous pyrites, in quartz, at about 150 feet from surface.

714. Hanging wall.

715. Auriferous quartz, from surface.

716. Footwall.

A tunnel has been driven in the direction of the course of the reef into the side of a hill. The reef runs north and south.

Queensland Commissioners ANNIE CLAIM, Cawarral.

717. Three specimens of auriferous iron pyrites, in country rock.

718. Two specimens of auriferous galena and sphalerite, in quartz, from 135-feet level.

The shaft is 135 feet down, the lode runs NNE. and SSW. and dips ESE. in the ratio of about 1 : 3 feet. In 1883, 556 tons of "stone" were crushed for an average yield of nearly 3 oz. of gold per ton.

Queensland Commissioners ... BLOCK AND PILLAR G.M. Co., Crocodile.

719. Auriferous pyrites with calcite, from 115 feet below surface.

720. Auriferous quartz, from 100 feet below surface.

721. Country rock.

The reef runs E. and W., and dips to the N. at 45 degrees. The manager of the claim stated that the "clean" pyrites of this reef had assayed as high as 30 oz. of gold to the ton. Mr. George Heath, of Rockhampton, was the assayer. A noteworthy improvement in winding-gear has been introduced on this claim, whereby the kibble can be instantly stopped in ascending or descending, no matter what the speed of the hauling engine. The machine is called the "Patent Paper Friction Hoist."

Queensland Commissioners ENDEAVOUR, Cawarral.

722. Auriferous iron pyrites in lode formation, from 60 feet below surface.

STOVER'S CLAIM, Crocodile.

723. Auriferous quartz, from surface.

724. " " 10 feet from mouth of tunnel.

725. " " 28 " " "

726. " " and pyrites.

727. " "

(CLERMONT) PEAK DOWNS GOLD FIELD.

Clermont, the official and commercial centre of the field, is 227 miles by railway from Rockhampton. Alluvial gold was first found here in 1861, and the usual rush set in. Gold was found by degrees

over a wide radius of the country. Many of the gullies were rich, but the metal was soon worked out, as the ground was shallow. Alluvial gold is still being found, as the subjoined statistics prove, but quartz reefing is not carried out to any great extent yet. At Cement Hill, some 12 miles from Clermont, there is an alluvial deposit which promises very well.

The population, according to Mr. Gold-Warden Hodgkinson, is composed of :—

Quartz miners	...	...	...	...	10
Alluvial miners	...	...	...	...	180
Persons connected with machinery	...	...	...	...	10
Tradesmen	...	...	...	...	15
Women and children	...	...	...	...	24
<hr/>					
Total number of Europeans	...	...	...	...	239
Miners other than European	...	...	...	...	107
Storekeeper other than European	...	...	...	...	1
<hr/>					
Total population*	...	...	...	...	347

The local banks bought during the year 1884 :—

				Oz.	dwt.	grs.
Gold from quartz	...	...	...	357	15	6
Gold from alluvium	...	...	...	2,395	2	16
				<hr/>		
Gold from both sources	...	...	...	2,752	17	22

“As it is impossible to get accurate figures for the total production of alluvial gold, I have added one-fourth to the alluvial returns, which brings the total output of gold up to 3,268 oz., which, at £3 15s. 6d. per oz., would realise £12,336 14s. This represents, I think, pretty closely the actual output of the field for 1884.”*

Queensland Commissioners **PEAK DOWNS COPPER MINES.**

729. Two specimens native copper, in quartz.

730. Iron pyrites, very fine-grained.

Private Exhibit by H. Salmon, Esquire.

731i. Copper carbonates, in small crystals.

731ii. Native copper, in quartz.

731iii. Country rocks.

731iv. Iron pyrites and chalcoppyrite.

731v. Black oxide of copper.

731vi. Malachite, in fine silky needles.

731vii. „ and azurite, in minute crystals.

* Mr. Gold-Warden Hodgkinson, in Annual Report, Department of Mines, 1884-85.

MR. H. SALMON'S PRIVATE EXHIBIT—*continued*:—

731VIII. Specimens of conversion of oxides into carbonates.

731IX. Malachite.

731X. Carbonates of copper, with mica on quartz.

731XI. Sulphides and oxides of copper, with quartz.

The difference in chemical composition between the two minerals—azurite and malachite—is very slight; the analyses—collated from “Dana’s Mineralogy”—being:—

—	MALACHITE.			AZURITE.			Analyst.
	CO ₂ .	CuO.	H ₂ O.	CO ₂ .	CuO.	H ₂ O.	
Turinsk, Ural ...	18.0	70.5	11.5	24.0	70.0	6.0	Klaproth
Cheasy ...	21.25	70.10	8.75	25.0	68.5	6.5	Vauguelin
Cheasy ...	18.5	72.2	9.3	25.46	69.08	5.46	Phillips.

These mines have been shut for some years, and there was great difficulty in getting any specimens at all, as the mines are flooded. The information to be obtained locally was very meagre. The deposits must have been of great richness, as the specimens of malachite in the Queensland Museum testify. The museum specimens of native copper from the same mines are also very fine.

“Igneous and metamorphic rocks predominate; the country rocks of the “Peak” being entirely composed of partially decomposed trachyte. An amygdaloidal dolerite sometimes contains patches of copper-ore, and some of the cupriferous traps are said to very closely resemble those of the Lake Superior Copper Mines. As early as 1870, 29,168 tons of 20 per cent. copper-ores had been raised from this property. About that period a lode, 2 feet in width, running E. and W., was cut at a depth of 40 fathoms from the surface, and traced for a distance of 250 fathoms. This discovery was followed, in 1873, by that of another lode containing large quantities of black oxide of copper. In five years the dividends on a nominal capital of £100,000 reached the sum of £215,250, besides which £53,577 had been written off the value at the mines. The company, however, had to contend with serious difficulties—a land carriage of 250 miles to the port, and miners’ wages ranging from £3 to £4 a week. A decline in the shipment of ore, or in the price of copper, very seriously affected the undertaking, which was eventually closed.”* The company put up some score of smelting furnaces (reverberatory).

* “Ore Deposits,” J. A. Phillips, 1884, p. 490.

Queensland Commissioners { CEMENT HILL, Spring Rush, 12 miles from Clermont.

732. Auriferous drift, yielding 10 dwt. free gold per ton by present treatment.

The plant consists merely of four stampers and riffles to catch the gold; no mercury is used. The proprietors intend putting up a complete plant now that the value of the deposit is proved.

The cement consists mainly of quartz pebbles of various sizes, very much waterworn, and carries coarse finely divided gold.

Queensland Commissioners ... SOMERSETSHIRE REEF, McDonald's Flat.

733. Surface quartz; yields by crushing $1\frac{1}{2}$ oz. gold per ton of stone.

734. Two specimens of auriferous quartz, from 56 feet below the surface.

735. Two specimens of iron pyrites, in quartz, from 100 feet below the surface.

736. Auriferous quartz, from 110 feet below the surface.

737. Country rock.

Queensland Commissioners ... MR. AYLMEY'S CLAIM, Copperfield.

738. Four specimens of auriferous pyrites, in quartz.

739. Two specimens of country rock, showing tortion produced by quartz leader.

Queensland Commissioners CUMBERLAND REEF.

740. Auriferous quartz; yields by crushing 4 oz. gold per ton of stone.

741. Footwall.

MOUNT MORGAN, ROCKHAMPTON.

Queensland Commissioners MOUNT MORGAN.

XLII. Two cubes rough-dressed limonite, showing stuff as at present quarried; the average crushing yields 7 oz. of gold per ton.

XLIII. Bulk specimen of limonite, weight 100 lbs., averaging 7 oz. of gold per ton.

741I. This specimen was taken from a drusy cavity, and shows the colouring of the limonite in stalactitic form.

741II. { These specimens of the different sinters, dyke, and auriferous limonite are better explained in Mr. Jack's report, from which the following notes have been extracted:—
to
741XIII. {

“Mount Morgan lies about 22 miles SSW. of Rockhampton, and near the head of the Dee, a tributary of the Dawson River.

"For the first 12 miles after leaving Rockhampton a low alluvial country is traversed. Out of the alluvial clay there rise here and there isolated mounds and ridges of greywackes and shales, both hardened, the latter sometimes into lydian stone and ribbon jasper, but not otherwise greatly altered. Although no limestones are seen on the road to Mount Morgan, the formation abounds in limestone beds, which may yet yield fossils to determine its age, but at present have only afforded some encrinites and corals resembling the genus *Helio-lites*. There is, in fact, no sufficient evidence of the age of the deposit, but it is certainly palæozoic.

"About 12 miles from Rockhampton, on the heads of Grace-mere Creek, granite is seen in a gully. It is soft and decomposing, and is covered with boulders of a coarse ferruginous siliceous grit.

"Some 5 miles further is the Razorback Range, a sharp 'pinch' on the road leading up to a tableland which stands about 900 feet above the sea-level. The rocks seen on the road are metamorphosed strata, possibly belonging to the same formation which presents itself in a less altered form on the northern side of the granite. Similar country prevails till, in 5 miles more, Mount Morgan is reached.

"In the immediate neighbourhood of Mount Morgan, the 'country rock' consists mainly of bluish-grey quartzite, a fine-grained siliceous sandstone now more or less vitrified—full of minute crystals of iron pyrites and specks of magnetic iron ore—greywackes of the ordinary type, hard fine-grained sandstones or mingled siliceous and felspathic materials now somewhat indurated and, lastly, occasional masses of shale hardened to a flinty consistency, and a few belts of serpentine. As the stratified rocks in this particular locality appear to have been in thick beds, and as their metamorphism has gone a considerable length, it is not easy to be certain of either dip or strike. The stratified rocks are moreover interrupted and intersected in every direction by dykes and other intrusive masses of dolerite (itself altered by the substitution of viridite for its augite or olivine), rhyolite, and other igneous rocks, the intrusive masses apparently occupying as much space as the remnant of the original stratified formation itself.

"This country rock is traversed by reefs of the ordinary description, as, for instance, the Golden Spur reefs, and the Crow's Nest reef, and the Mundic reef, all of which contain a pretty fair amount of gold.

"Mount Morgan itself contains gold in a very unusual—I believe, a quite unprecedented—formation.

"Aneroid measurements give the altitude of Razorback as 900 feet; of Wall and Company's offices, near the No. 1 Machine, as 705 feet; and of Mount Morgan as 1,225 feet above the sea-level.

"The mine, which is at the summit of the mountain, is approached by a rather steep road, but the difficulties of haulage are lessened by

tipping the stone into a shoot, an expedient which reduces the actual descent by horse-power to something like 300 feet in a distance of about half-a-mile.

"The work (apart from prospecting or exploring operations) is carried on in two quarries or faces. No. 1 cuts into the hill from a level of about 25 feet below the summit, and is designed simply to remove the top of the mountain for the purpose of passing it through the stampers. No. 2 or magazine quarry presents the aspect of a 'siding' road cut out of a steep hill, and attacks the auriferous deposit at a level of about 100 feet below No. 1.

"The central portion of the upper cutting is a large mass of brown hæmatite ironstone generally in great blocks (up to some tons in weight) with a stalactitic structure, as if the iron oxide had gradually filled up cavities left in the original deposit. The ironstone contains gold of extraordinary fineness, which, however, after a little practice, can be detected in almost every fresh fracture. The ironstone is more or less mixed with fine siliceous granules. Gradually to right and left of the central mass the silica more and more replaces the ironstone. It is a frothy, spongy, or cellular sinter, sometimes so light from the enlargement of air in its pores that it floats in the water like pumice. Fine gold is disseminated throughout this siliceous deposit as well as in the ironstone. Near the west end of the cutting is a vertical dyke of kaolin mixed with fine siliceous granules, passing into pure kaolin, with some silicates of magnesia, including a fine variety of French chalk.

"I selected a number of specimens as characteristic of the various deposits of the upper cutting. These, when assayed by Mr. Karl Staiger, City Analyst, Brisbane, gave the following result:—

Stalactitic brown hæmatite from middle of cutting, 6 oz. 11 dwt. gold per ton.

Siliceous sinter veined with quartz, 4 oz. 5 dwt. gold per ton.

A mixed mass of ironstone and silica from the level of the road, east of the dyke, 5 oz. 3 dwt. gold per ton.

Iron-stained siliceous sinter from west side of dyke, 10 oz. 14 dwt. gold per ton.

"The lower or magazine face presents a sort of fan-like arrangement of its various materials. In the centre is a band (almost vertical) of brown hæmatite in large 'bombs,' with a mammilated botryoidal or sometimes reniform appearance. To the right (east) is a nearly vertical deposit of aluminous iron-ochre, followed by a mass (still nearly vertical) of red hæmatite in large cellular bombs. To the east is a broad mass of loose iron-stained siliceous and aluminous material which begins to lean eastward like the outer feathers of a fan. A great mass of loose earthy red hæmatite, another of brown hæmatite weathering to iron-ochre, another of red earthy hæmatite, and another of brown hæmatite in large (ton)

blocks, appear in succession as the cutting is followed to the east. The magazine (near the east end of the cutting) is excavated in a fine white siliceous earth, and the cutting ends with a mass of soft earthy aluminite. Beginning from the west side of the nearly vertical mass of brown hæmatite first described, we pass in succession in going westward a band of yellow ochre, a broad belt of light siliceous sinter iron-stained, and containing some angular fragments of the quartzite of the 'country rock,' a belt of similar siliceous sinter mixed with earthy red hæmatite, and finally a broad mass of loose siliceous sinter traversed by siliceous veins, and containing some angular fragments of the 'country rock,' the members of the series leaning more and more fan-fashion to the west as they recede from the central vertical bands. At the end of the cutting is a mass of magnesian and aluminous silicates, which is probably the prolongation of the dyke seen in the upper quarry. Mr. Lyle, the manager, informed me that he had got 'prospects' in every part of this cutting, with the exception of the siliceous earth at the magazine. This was corroborated by my own observations. I ground and washed a great number of specimens (of my own selection) from both the upper and lower cutting, and from every variety of material, and was surprised and delighted with the prospects obtained, in most cases from stuff which miners would regard as most unpromising:

"Mr. Staiger's assays of characteristic samples, selected from the lower cutting, yielded gold as follows:—

Brown hæmatite, 3 oz. 6 dwt. per ton.

Red hæmatite, 6 oz. 16 dwt. per ton.

Aluminous rock from west of dyke. No gold.

Siliceous sinter from among the aluminous rock, 3 oz. 15 dwt. per ton.

"Down the hillsides to the north, west, and south a similar deposit is everywhere met with—a frothy or spongy matrix, sometimes aluminous and sometimes siliceous, generally iron-stained, and occasionally associated with large masses of red and brown hæmatite; but gold has as yet only been obtained from a few places away from the hill-top, although naturally there has been vigorous prospecting (so far as possible in an unusually dry season), wherever the 'formation' resembled that of Mount Morgan. Perhaps the deposit on the slopes is more aluminous and less siliceous, and contains less of iron oxides than on the hill-top, but these are the chief differences, and the formation has evidently one origin throughout.

"After a careful study of the whole formation I have come to the conclusion that nothing but a thermal spring, in the open air, could have deposited the material under consideration. The frothy siliceous sinter agrees in every respect with the deposits of New Zealand and Iceland geysers, and of the still more wonderful hot springs of the Yellowstone National Park, so graphically and scientifically described by Dr. A. C. Peale. [Twelfth Annual Report of the United States

Geological and Geographical Survey of the Territories, Part II., Section 2, 'On the Thermal Springs of Yellowstone National Park.' Washington: 1883.] The 'frothy' and cavernous condition of the siliceous sinter of Mount Morgan may be accounted for by the escape of steam while the silica was yet (after the deposition on the evaporation of the water) in the gelatinous condition so frequently observed in the deposits of hot springs. The aluminous silicates represent the familiar outbursts and flow of mud. The iron oxide appears to have been deposited in some cases along with the silica and alumina, and in others to have been deposited later—its solvent fluid having been, as it were, injected into the interstices, vesicles, and caverns of the silica and alumina. In some cases it may have been originally pyrites, as it now and then occurs in cubical hollows. Calcareous sinter is very common in siliceous springs, and its absence from Mount Morgan must needs imply the local absence of limestones among the rocks from which the spring was fed. The silica would be found abundantly in the quartzites, and the alumina in the shales and greywackes, of the country in the neighbourhood, and possibly both silica and alumina may have come in part from a deep-seated underlying granite. The gold, and to some extent the iron, may have been dissolved out of the iron pyrites of such reefs as the "Mundic Reef" seen in Mundic Creek; the gold possibly by chlorine produced by the contact of hydrochloric acid, derived from the decomposition of chlorides, with manganese, which occurs sparingly in the form of pyrolusite along with the ironstone of Mount Morgan.

"Allusion has already been made to the rhyolite dykes which intersect the metamorphosed stratified rocks of the district.

"The rock may be thus described:—A hard, very fine-grained, almost compact, dark-grey felsitic matrix with numerous and large crystals of sanidine and a few granules or blebs of quartz. Fragments of hornblende crystals occur, but so rarely that the mineral must be regarded as accidental. No augite; no olivine.

"Several of these dykes run from north-west to south-east; one runs from north-east to south-west through Mineral Selection No. 75; and still further west, a large—probably intrusive—mass of rhyolite occurs.

"That the deposit left by the thermal spring is newer than the altered stratified rocks through which it has burst is obvious; and that it is even newer than the much later date when the rhyolite dykes filled up fissures in the stratified rocks, is proved by the fact that the dykes are clearly seen in some instances to be covered over by the siliceous, aluminous, and ferruginous deposits of the springs.

"But yet another circumstance helps us in our endeavour to ascertain the age of the outburst of the Mount Morgan hot spring. About a mile to the west of the 'mountain' is a mass—apparently about 150 feet in thickness—of horizontal bedded sandstone. It rests apparently at this point on a mass of rhyolite, but in other

places it may be seen lying on the upturned edges of quartzite and greywacke strata, similar in character to those of the 'country' around Mount Morgan. The base of this formation is a fine volcanic dust. The upper beds are coarsely gritty, and for the most part siliceous, varying from white to brown and red, and containing occasional pebbles of quartz and quartzite. I recognise in it, without hesitation, Daintree's 'Desert Sandstone,' which I have traced from Torres Straits to Maryborough, and which lies unconformably upon, and is consequently newer than, the strata of the Western Downs. The latter present strong cretaceous affinities.

"The base of the desert sandstone I should judge to be about 100 feet lower than the summit of Mount Morgan.

"Standing on the sandstone cliffs, so as to look to the east past the south side of Mount Morgan, the observer can descry across the valley of the Dee the familiar contour of horizontally-bedded sandstone cliffs stretching north and south. As nearly as can be judged by the eye, they are on the same level as the cliffs on the opposite side of the valley, and there can be no doubt that the valley has been carved out of a once-continuous cake of horizontal sandstone. The question arises, 'Was Mount Morgan an island in the sea or lake in which the sandstones were laid down?' In that case the hot spring was older than the desert sandstone.

"The answer is easily made. Had there been shores to this sea or lake where Mount Morgan now stands, the sandstone in the neighbourhood would have been full of pebbles of sinter and ironstone derived from the waste of such easily-degraded rocks. But I saw none such, and I believe they do not occur. The hot spring, then, was newer, and not older, than the desert sandstone.

"In many places in the North the valleys carved out of the desert sandstone became theatres of volcanic activity. Among such places are the McIvor River, north of Cooktown, and the Mulgrave River, near Cairns. These volcanoes burst out near the heads of the valleys and filled the lower reaches with flows of basaltic lava to which we owe some of the richest agricultural land in the colony. Another form of volcanic activity was developed at the same period near the head of the Dee Valley. After the desert sandstone had been uplifted, and the carving out of the present valleys had been carried on for long ages—in fact, till the valleys had nearly acquired their present contours—basaltic lavas flowed down the valleys over the upturned slates of the McIvor and over the auriferous drifts of the Mulgrave, and a geyser of enormous proportions spouted fitfully in the valley of the Dee, carrying with it not only water but in all probability chloride of gold.

"The Mount Morgan geyser, as well as the McIvor and Mulgrave volcanoes, probably date from tertiary times, and are contemporaneous with many of the basalts which cover auriferous drifts in Victoria.

"In the presence of so much ironstone a precipitant for the gold need not be far to seek. Protoxide of iron was probably present in

sufficient quantities to perform this important function, but it may have been aided by tannic acid derived from vegetable matter accumulated in the basin. Several instances of the occurrence of vegetable matter in the basin of hot springs in the Yellowstone region are recorded in the report already quoted. Precipitation of the gold by means of tannic acid would accord better with the confinement of the gold to the basin or crater of Mount Morgan than precipitation by ferrous oxide.

"In such active geysers as are accessible to observation, we find a narrow pipe or fissure, terminating upward in a crater-like cup or basin. The Great Iceland Geyser, for example, has a pipe 12 feet in diameter, which has been sounded to a depth of 70 feet. I have seen no satisfactory explanation of the necessity for a cup, nor can I suggest one, but all the same the repeated occurrence of the cup evidently takes place in obedience to some natural law. It may be taken for granted that the Mount Morgan geyser was no exception to the rule, and I believe that that upper portion of the mount where ironstone predominates, and to which gold is almost confined, represents a basin occasionally filled with a fluid in which silica, iron, alumina, manganese, and gold were held in solution, to be deposited when the bulk of the water from time to time withdrew into the pipe or the subterranean reservoirs with which the pipe communicated. The overflow of the ejected fluid left a siliceous, aluminous, and ferruginous deposit on the slopes of the hillside, but the gold does not appear to have been deposited to any extent beyond the limits of the basin. It may be remarked that 'prospects' of gold have been obtained in a few localities in the overflow deposit. In such cases it may be a question whether the gold was carried down with the overflow, or whether it emanated from some of the subsidiary springs, which in such cases, as our experience of active geysers has shown, are pretty sure to break out in the vicinity of the main outflow. 'Callan's Knob,' for instance, is suggestive of one of these smaller springs."*

Dr. Liebius says, in his "Notes on Gold":—"No gold has yet been found in nature unalloyed with silver,† yet this gold from the Mount Morgan mine, of which, since February last, already over 10,000 oz. have been received as retorted gold at the Sydney Mint, is found to be free from silver—a minute trace excepted. I have brought some of this retorted gold rolled out very thin to show its toughness. It assays 99·7 per cent. of gold; the rest is copper, with a trace of iron. Gold assaying 99·7 per cent. is worth £4 4s. 8d. per oz. Gold from the same mine received at the Mint assayed as high as 99·8 per cent. It is, as far as I know, the richest native gold hitherto found. The richest gold next to this comes, I believe, from Maryborough, Victoria, which assays 99·3 per cent.; while that from its namesake in Queensland contains only 85 per cent. gold. F. B. Miller, in his paper on 'Gold-

* "Mount Morgan Gold Deposits." Report by R. L. Jack, Govt. Geologist.

† Lock—"Gold: its Occurrence and Extraction," 1882.

refining by Chlorine Gas,' read before this society in 1869, alludes to the curious fact that, as a rule, the gold contains more silver, as we go northwards, giving the average fineness of Victorian gold as 96 per cent., New South Wales 93 per cent., and Queensland 87 per cent.* He says, however, 'these are averages only. It is not to be supposed that there is a regular and consecutive diminution in fineness with every degree of latitude we go north. There are exceptional localities in the north of this colony, as at the Rocky River, where the gold is over 96 per cent.' To these exceptions we must now add the gold from Mount Morgan. Having now shortly described the remarkable occurrence and purity of this Mount Morgan gold, a not less interesting, though less satisfactory fact is this—that only about half the gold is extracted by the ordinary quartz-crushing and amalgamating machinery. The *Capricornian* says:—'The tailings which are being stored are said to contain as much gold as is saved, and, as they will be subjected to treatment at a future date, the result will be highly advantageous to the owners.' Having the small quartz-crushing machinery erected at the Sydney Mint under my charge, I have had an opportunity of testing this fact. In November last we received, through Mr. Hall, of Sydney, 458 lbs. of this ferruginous quartz, part of it consisting of picked stone. It was carefully crushed and amalgamated in the Chilian mill, with 240 lbs. of mercury. Thus, 7·44 oz. of gold, assaying 991·5, were extracted. Another lot, weighing 174 lbs., was similarly treated, and 12·12 oz. of gold extracted, assaying 998·2. Thus lot 1 gave gold at the rate of 39·32 oz. standard per ton of quartz. In lot 1, gold at the rate of 46 oz. 2 dwt. 12 grs. per ton was left in the tailings; while in lot 2, the tailings assayed 64 oz. 5 dwt. 18 grs. of gold per ton. Both lots of tailings were now mixed and passed for two hours in the Chilian mill with 240 lbs. clean retorted mercury—only 1·66 oz. of gold, assaying 981, were, however, obtained by this treatment. The tailings were dried and found to weigh 476 lbs., containing gold at the rate of 41 oz. 13 dwt. 16 grs. per ton; or, in above 476 lbs. tailings, no less than 8 oz. 17 dwt. 3 grs. gold. I have brought some of these tailings here. Under the microscope there is no gold visible. I thought that if the oxide of iron were removed, by boiling the tailings in hydrochloric acid, and the solution filtered off, the gold might more readily be discernible in the boiled-out residue. I found, however, that this was not the case; and that 1,000 grs. of tailings thus boiled in strong hydrochloric acid, by which about 20 per cent. were dissolved, gave me only 0·730 grs. of pure gold, while 1000 grs. of the original tailings, not boiled out, gave 1·306 grs. of gold, the same as when boiled within nitric acid. The loss of gold by boiling in hydrochloric acid was no doubt due to the action of this acid upon manganese in the ore, whereby chlorine gas was formed, a ready solvent for gold. That the ordinary amalgamating Chilian mill did not extract all the gold in this stone I can only attribute to the supposition that the

* *Vide ante*, page 2.

oxide of iron has literally coated some of the fine gold, thus preventing it from coming in contact with the mercury. For such ore, Plattner's chlorination process, if worked on a large scale, ought to be highly successful. I am glad to hear that arrangements have been made by which the tailings will presently be treated at the mine by the chlorination process, whereby the gold is dissolved by an aqueous solution of chlorine gas, and precipitated by hydro-sulphuric acid. It would, however, be interesting to see whether some or any of the numerous patent gold extracting machineries or appliances would be able to overcome the difficulty, and to treat economically and successfully these tailings or the original ore. That it would be of great advantage both to a patentee and the owners of this mine is evident.*

STANTHORPE.

This stanniferous district includes a tract of granite country, which, commencing near Maryland, is bounded on the east by the Great Dividing Range; on the south by the watershed of the Severn River; on the west by a curved line, being the junction of the slate and granite from near the head of Accommodation Creek, northerly to the range forming the southern watershed of the Condamine River, a little to the west of Mount Magnus; thence on the north by the same range to the point of commencement. The town is within two or three miles of the border between New South Wales and Queensland.

In the "Proceedings of the Geological Society for 1873" (p. 3, vol. 29), Mr. F. T. Gregory describes the physical and geological character of nearly the whole of the area as that of an elevated granitic tableland intersected by ranges of abrupt hills, the highest limits of which are about 3,000 feet above the sea-level. Mr. Gregory quotes Mr. D'Oyley Aplin's description of the mineral character of the rocks generally. Mr. Aplin says:—"I have met with no other description of tin-ore than the peroxide (cassiterite), even in specimens from veins. The ore, so far as I have seen it, is associated with granite only, which is invariably red, *i.e.*, the felspar is a pink or red orthoclase, and the mica is generally black; but when crystals of tin-ore are found *in situ* the mica is white. The granite generally is coarse-grained, and seems to disintegrate readily under atmospheric influence. There are numerous bands of loosely aggregated rock, granitoid in character, highly micaceous, and traversed by bands and veins of quartz in all directions; in these bands crystals of tin-ore are abundant, and they (the bands) seem to have constituted local feeders along the courses of drainage. The crystals of tin-ore are generally found imbedded in and along the margin of the quartz threads or veins in those bands. In some instances they are imbedded in the micaceous portions only; and the mica is invariably white in those instances in the bands referred to. The strike of the bands and the distinct quartz-veins is generally NE. and SE."

* Extract from Dr. Liebius' paper, "Notes on Gold." Proceedings of the Royal Society, N.S.W., 2nd July, 1884; vol. xviii., 1884.

Mr. Gregory estimates the population at greater than 1,200, and possibly reaching 1,500 (July 1872).

In the discussion on Mr. Gregory's report, Mr. Daintree remarked that tin and other minerals were limited to the palæozoic and metamorphic districts traversed by dykes, such as those mentioned in Mr. Ulrich's paper on tin-ore discoveries, across the Queensland borders, in New South Wales*; and although very large areas of granite similar to that of the Severn River were to be found in other parts of Queensland and Australia, the stanniferous portions would be confined to the areas traversed by such dykes.

In the Report on the Queensland Tin Field (*i.e.*, Stanthorpe, as Herberton and Wild River were not discovered till 1880), by Walter C. Hume, Esquire, the Commissioner for Mineral Lands, dated 1874, the following particulars of dykes are given:—

Trap dykes have been found in only one locality—namely, a little west of Ballandean head station. They were thin, and the strike was NE.

Porphyritic or Elvan Dykes.—Found in many places, varying from a few inches to several feet in thickness; their strike is ENE. to NE.

Granite Dykes.—In only two or three instances are fine-grained granite dykes found traversing coarse granite. In direction they coincide with the elvans.

The following statistics were published by the same author:—

Population, estimated 3,000

Largest yields from small areas:—

Locality.	Area.	Tons ore.
Stanthorpe Reserve	7 acres	120
Sugarloaf Creek, Ruby Tin Mining Co. ...	66 square feet ...	10
Bed of Lode Creek	10 linear chains ...	60
From a bar of boulders at New Banca Co., Quartpot Creek	3 square chains ...	40

The richest washdirt found was 90 lbs. clean cassiterite per cubic foot; ordinary rich washdirt found was 50 lbs. clean cassiterite per cubic foot; good average washdirt, from 2 lbs. to 10 lbs. clean cassiterite per cubic foot. Cost of raising tin per ton varied from £10 to £45, the average being £33.

* *Proceedings Geological Society, N.S.W.*, 1873, vol. xxix. p. 6.—“These dykes are composed of a softer kind of granite which consists, perhaps for 75 per cent. of its mass, of small scaly greenish mica, and the remainder of felspar, quartz being but very rarely observable. Through these micaceous dykes, cassiterite is not only well distributed in implanted crystals, from the size of a pin's head to above that of a pea, but it occurs also in irregular veins of several inches thickness, and nests and branches yielding lumps of nearly pure ore up to above 50 lbs. in weight. Part of the mass of one of these dykes forms a regular breccia of mica and imperfectly crystallised tin-ore, cemented by hydrous oxide of iron.”

TIN ORE RAISED.

From—	To—	Tons.	Price per ton in Stanthorpe at latter date.
June	December, 1872 ...	1,400	£ s. d. 65 0 0
January	June, 1873	2,114	65 0 0
July	December, 1873 ...	3,160	46 10 0
January	31st March, 1874 ...	1,360	42 0 0
	TOTAL	8,034*	...

Amongst the minerals enumerated in the same report are:—

Topaz.—At junction of Spring Creek with the Broadwater. Also a few small diamonds and sapphires.

Magnetite and hæmatite, near the head of Pike's Creek.

Cement casing, quartz, and micaceous granite with beryl, from Love and Moffat's lode, 40 feet below surface.

Mispickel, from Killmister.

Galena and iron pyrites, in decomposed elvan, from Albion Co.'s land, Severn River.

Molybdenite, in quartz from lode, Killmister.

Wolfram, in stanniferous quartz veins.

In addition to these there are in the Queensland Museum the following specimens from the district:—

Auriferous stream-tin.

Cassiterite in greisen.

Cassiterite and zircons.

Almandine garnets.

Magnetite.

Sulphate of molybdenum.

Auriferous wolfram.

Scheelite is also stated as occurring among the minerals of the district.

Mr. Jack † says:—. . . . "The heads of the streams which drain this sort of country are shallow and swampy. When the streams attain any magnitude, they find it easy to wander among the soft decomposing surface of the lower granite country. The Severn, therefore, and its tributaries, such as Quartpot Creek, have exceedingly tortuous courses and deep alluvial deposits.

* At the prices given in the above table, the 8,034 tons of tin-ore realised £432,470.

† "Stanthorpe Tin Mining District: Preliminary Report, by R. L. Jack, Government Geologist."

"By far the greater part of the tin-ore is in fine grains of the size of a pin's head and under, and almost always reveals under the lens some trace of an original crystalline condition. It contains a large proportion of grains of the 'ruby' and 'amber' varieties. Together with quartz granules, it forms as a general rule the matrix of a coarse imperfectly cemented conglomerate or gravel of quartz and granite pebbles. The pebbles are often rather squared than rounded. They are not of a nature to retain striations well; but the shape of some of them led me strongly to suspect that their attrition might, in the first instance, have been due to glacial action. The crystalline fragments of felspar, which have frequently been carried into the wash along with the quartz and tin-stone, have in most cases decomposed into a stiff kaolin, which sometimes helps to keep the wash together.

"The tin-wash is for the most part confined to the layer of gravel or unconsolidated conglomerate lying directly on the bed rock. This gravel is generally surmounted by a varying thickness (up to 25 feet or more) of gritty sand, which is occasionally interrupted by thin layers of gravel (with streaks of tin-stone), or of clay.

"The inspection of the alluvial workings was undertaken with the object of seeing what light it might throw on the question—which has now become of the first importance—viz., the source of the tin. I arrived at the following conclusions:—

"The tin-stone, in its original matrix, was in the form of crystals, rarely of large size.

"It must have been *concentrated* by the weathering of its original matrix—whether reef, lode, or dyke—and of the encasing granite country, during a long period of gentle subaërial denudation, when the rains were never sufficiently heavy to remove the tin, or even the larger quartz stones, from the hillsides where they were left by the decay of their matrix.

"To this period there apparently succeeded a limited time of heavy rainfall, or possibly of snow, whose melting produced a rush of water sufficiently strong to 'sluice' the general surface of the hill country, and to deposit its heavier materials (including the tin-stone) in the upper reaches of the Severn and its tributaries, while carrying off its finer particles to the plains of the south-west.

"To the current period belongs the accumulation, under temperate conditions, of the existing surface-wash on the hillsides (moderately rich in tin), and the deposition of the sand (almost destitute of tin), which overlies the tin-wash in the streams.

"In traversing the hill country, two distinct types of tin-bearing rocks were met with—quartz reefs and igneous dykes.

"The *Reefs* are best developed in the ridges on the left bank of Quartpot Creek, nearly opposite Sommerville's selection. Here are seen the outcrops of at least seven reefs or veins, four of which bear NNE., one NE., and one E. and W. They are of highly crystalline quartz (sometimes smoky), and all contain much wolfram and some

moderate-sized crystals of tin, the latter almost always confined to faces and joints. Such reefs are apparently the sources of some of the coarser stream-tin which is locally met with.

"The *Dykes* are composed of granular quartz, fine scaly lithi-mica, and small crystals of tin-stone, and form a rock much resembling the stanniferous greisen of Saxony. They seem to have been erupted in a molten condition (bringing up the tin-oxide with them) among fissures in the granite. The tin-stone bears, in the samples I have seen, a proportion of five or ten per cent. to the total mass of the rock, but this proportion would doubtless increase at a depth, as the surface has obviously suffered from weathering and lost a great many grains of ore. Dykes of this character are seen at various points in the range on the boundary of the colony, between the heads of Kettle Swamp and Sugarloaf Creeks, but I have no reason to doubt that they are common to the whole of the granite country.

"The dykes run, at varying angles, from NNE. to ENE., coinciding in this with a system of vertical jointing, which characterises the granite of the district.

"Although the quartz reefs may occasionally afford 'bunches' of tin-ore, as they do on the New South Wales side of the border, I have little doubt that after the exhaustion of the alluvial deposits the future of Stanthorpe will depend on the question of the profitable working of the stanniferous dykes. The tin-ore crystals of the dykes are precisely what, with a little attrition, would yield the stream-tin of the heads of the Severn. I should recommend to all concerned in the prosperity of the place a vigorous search for dykes of this character—(1) by prospecting the surface-wash and following up any indication of its richness, (2) by cross-trenching at right angles to the direction of the joints in the granite in the places to which the surface-prospecting may have led, and (3) by sinking on the dykes, when found, to a sufficient depth to prove their productiveness where they are beyond the influence of atmospheric agencies.

"There is every reason to believe that dykes of the character referred to will be regular in thickness and have good walls. The tin oxide will probably be found disseminated uniformly throughout; in fact, it may be predicted that everything will be favourable to mining it, provided the proportion of ore be sufficiently high to pay. The immense quantity of ore which has been derived from the stream workings forms the strongest argument in favour of the hope that the industrious use of the dish and pick will be rewarded by the discovery of rich 'stockwerk' tin deposits. What little attention has hitherto been devoted to lodes in the district has been mainly directed to quartz reefs. I should recommend a departure from this line of search, and a diligent inquiry for stanniferous *dykes*. Everything connected with the occurrence of stream-tin points to *numerous* sources.

"The dykes in all probability traverse the slate and greywacke country in the neighbourhood of the granite boss, so that prospecting operations need not be entirely confined to the latter."

As bearing on the question of glacial action in Australia, the following note by R. Von. Lendenfeld may be taken in conjunction with Mr. Jack's observations :—

"In the proceedings of the Linnean Society of New South Wales, vol. x., part i., I have given a description of the valleys round Mount Kosciusco, and have stated as the result of my examination of those parts, that—

1. The plateau is in the central part of the Australian Alps; was glaciated not so very long ago, and since that part of Australia had obtained its present aspect, down to a height of 5,800.
2. No trace of prehistoric glaciers have been observed by me in the Kosciusco group of mountains below the height given above."

"Recently I have seen some photographs of glacier-polished rocks, which, being siluro-devonian, and not granitic, as those observed by me on Mount Kosciusco, have retained the striae or scratches, made by the hard stone imbedded in the bottom of the ice-stream which once flowed over them, very well.

"These rocks are situated in the Mount Lofty group of mountains, near Adelaide; and while their appearance furnishes another proof to my statement, that Australia has been subject to glaciation, it shows, at the same time, that near the southern coast the glaciers must have descended much further than round Mount Kosciusco, as the height of the lofty mountains barely exceeds 2,000 feet.

"It appears doubtful, however, whether the striae referred to are isochrone with the glacial traces I discovered on Mount Kosciusco."*

The following minerals were collected by the late J. De P. Tyrel, Esq., J.P.; and Messrs. A. Barton, W. Seaman, J. P. Amosfield, and E. Johnson; and but for whose energy there would have been no exhibit at all from the field, as the mineral collector had to be recalled for the packing and cataloguing of the various collections.

List of Minerals collected by the late J. De P. Tyrel, Esq., J.P.; and Messrs. A. Barton, W. Seaman, J. P. Amosfield, and E. Johnson (Local Committee).

742. Washdirt.

743. Washdirt. Severn River.

744. Quartz crystal.

745. Plumbago. This is found 18 miles from Stanthorpe.

746. Plumbago. Stanthorpe district.

747. Cassiterite (stream-tin); from Mountain Station Gully, the Six-mile.

* "Proceedings Linnean Society of N.S.W., vol. x., part iii."

STANTHORPE LOCAL COMMITTEE'S EXHIBIT—*continued* :—

- 748. Cassiterite (stream-tin). The Nine-Mile.
- 749. Cassiterite (stream-tin).
These two samples are from Lode Creek.
- 750. Cassiterite (stream-tin); from Mrs. Aplin's, Glen Aplin, Severn River.
- 751. Cassiterite (stream-tin). Severn River.
- 752. Cassiterite (stream-tin). Ruby Creek.
- 753. Cassiterite (stream-tin). Herding-yard Creek.
- 754. Two cassiterite pebbles. Stanthorpe district.
- 755. Cassiterite crystals and quartz crystals on quartz; from Mole Tableland, per the late J. De P. Tyrel, Esq.
- 756. Lode-tin. Severn River.
- 757. Quartz and cassiterite crystals; from Johnson's new discovery.
- 758. Cassiterite, in quartz.
- 759. Auriferous pyrites and galena.
- 760. Country rock.
These three samples are from Pikedale (20 miles from Stanthorpe).
A complete analysis is given in the Appendix.
- 761. Washdirt, from the Britannia Claim.
- 762. Cassiterite, with quartz crystals and mica; from the Noble Tin Mining Company.
- 763. Piece of country rock, from Lode Creek.
- 764. Cassiterite (lode-tin), in quartz, from Mount Marley.
- 765. Cassiterite, with mica.
- 766. Cassiterite, with mica and quartz.
- 767. Cassiterite, in quartz.
- 768. "Formation," in sinking, 42 feet.
- 769. China-clay.

Queensland Commissioners ... { SPECIMENS FROM RAILWAY CUTTING,
STANTHORPE EXTENSION LINE.

- 769A. Four samples of orthoclase and smoky quartz. The largest specimen is covered with silica in the colloidal or perhaps crypto-crystalline form, similar to the silica in agates and chalcedony.
- 769B. Two specimens orthoclase, in large crystals, with minute crystals of quartz; one quartz crystal is rather larger.
- 769C. Quartz crystal, known as "smoky" quartz.

H. Farley, Esq. STANTHORPE, BROADWATER.

. Section of tin-mine as per following details:—

Particulars of Exhibit.

1. Contains granite rock, the bottom of the face.
2. Washdirt fairly rich, section to a foot deep.
3. Coarse drift, 4 feet thick.
4. Black clay and carbonised wood, 2 feet thick.
5. Hard sandy formation, 5 feet deep.
6. Clay formation, yellowish, 2 feet.
7. " " white and bluish, about 1 foot deep.
8. Cement formation, about $\frac{1}{2}$ -foot deep.
9. Fine drift sand, 12 to 18 inches.
10. Soil, about 2 feet deep.

The contents of the glass case are arranged to exhibit proportionally the respective thicknesses of the strata.

ETHERIDGE GOLD FIELD.

The mineral collector was unable to visit this field. Mr. Gold-Warden Samwell has written a most exhaustive treatise on the history and present state of the field. It is difficult to know what to extract and what to leave out of such a work, and to print the whole would swell this catalogue to an inconvenient size. Therefore it has been determined to bind the treatise and other reports on goldfields, placing them on the reading-room table for the perusal of persons who may wish to get the very fullest details. The three reports are:—

Mr. Gold-Warden McArthur's, on the Gladstone Gold Field;

Mr. Gold-Warden Samwell's, on the Etheridge Gold Field;

Mr. Gold-Warden Towner's, on the Hodgkinson Gold Field.

If all the gold (including the yield for 1885) that has been got or "won" from this field were to be melted and cast into a solid cube, the edge would measure 2 feet and nearly 6 inches. The gilt cube No. VI. has been made to ocularly demonstrate this.

Queensland Commissioners GILBERTON DISTRICT.

770. Copper-ore.

The lode runs east and west, and the width is 50 feet. The lode has not been worked at all.

The analysis by Mr. K. T. Staiger, Analyst, Brisbane, gives the following percentage composition:—

Oxides and carbonates of copper	...	...	71.163
Oxide of iron	...	...	19.709
Insoluble...	...	...	9.128
			100.000

Metallic copper 58.091 percent.

Queensland Commissioners CUMBERLAND REEF.

771. Auriferous mundic ore, from the 180-foot level.

The reef is 9 feet wide. The sample weighs 185 lbs. The stone of this reef has assayed as high as 27 oz. of gold per ton. The company (the Cumberland No. 1 North Gold-Mining Company) have extensive machinery on the way to the mine for the treatment of this ore.

Queensland Commissioners.

772. Decomposed lead-ore.

Running east and west, about 100 feet wide. It is stated some of the samples from this reef have assayed 125 oz. of silver to the ton. But when the sample arrived in Brisbane it was only found to contain a trace of silver and 1·17 per cent. of copper, with 5·12 per cent. of lead, the remainder principally consisting of oxide of iron and silicates. (Abridged from Mr. K. T. Staiger's Report.)

Queensland Commissioners.

773. Silver galena.

From a depth of 18 feet below the surface. The lode runs east and west, and is about 50 feet wide. Ore from the lode has assayed :—

Gold	...	...	...	...	...	4 oz.
Silver	...	...	...	...	...	84 „
Lead	...	...	...	...	...	54 per cent.

Mr. K. T. Staiger found in this sample 84 per cent. of metallic lead and 26 oz. 4 dwt. of silver per ton.

Queensland Commissioners GILBERTON.

774. Silver galena.

The lode is very large. The average assay of samples has given 155 oz. of silver per ton. No work has been done on the reef yet.

Queensland Commissioners.

775. Silver galena, from a neighbouring reef.

Queensland Commissioners TITANIA REEF No. 1.

776. Auriferous mundic ore, from the 60-foot level.

Exhibit weighs 56 lbs.

Queensland Commissioners TITANIA REEF No. 2.

777. Auriferous mundic.

This reef is from 3 to 5 feet wide. The mundic is described as being rich, dark, and intractable. A quantity has been sent to England to be smelted. It is stated that the assays give 57 oz. of gold per ton of ore. Weight of sample, 90 lbs.

Queensland Commissioners **NEW ZEALAND P.C. REEF.**

778. Auriferous mundic, from 130 feet below surface.

The reef is nearly vertical, and is about 3 feet wide. The stone assays 15 oz. of gold per ton. There is good machinery on the reef, steam winding and pumping gear. The sample weighs 56 lbs.

Queensland Commissioners **CUMBERLAND P.C. LEASE.**

779. Auriferous mundic, from 250 feet below surface.

The reef is at present 9 to 10 feet wide. The pyrites is described as dark free mundic which assays from 10 oz. to 15 oz. of gold per ton. The company (which is working with local capital—Messrs. O'Brien and Company), has powerful steam winding gear. Also a fine crushing plant erected about half-a mile from the mine, on a creek, across which a dam has been thrown to conserve the water. The underlie dips at about 45 degrees. The reef is about 13 miles west of Georgetown.

NORMANTON DISTRICT.**LIST OF EXHIBITS COLLECTED FOR THE COMMISSIONERS
BY MR. HANN.**

780.

The structure of these lenticular stones is concretionary; they are not apparently fossils. In the broken specimen a kind of cone in cone structure can be traced, the centre and beginning of the formation being possibly determined by a fragment of wood or other minute decomposing vegetable product. Malachite is an instance of how the radial arrangement of crystals may produce mamillated terminal surfaces.

781. Bulk hæmatite, from surface.

782. Bulk specimen copper carbonates, from surface.

783. Bulk specimen hæmatite, expected to carry gold, from surface.

784. Three specimens copper carbonates, from surface.

785. } (These specimens were forwarded by Mr. Hann for
786. } analysis, which appears in the Appendix.)

787. Copper carbonates.

788. }
789. } Galena.

790. Three specimens, of which an analysis is given in the Appendix.

N.B.—This collection was sent down from Normanton district for analysis, so that full particulars will be found in the Appendix.

KILKIVAN.

The collection of minerals from this field is very small, partly because Kilkivan is not at present as thriving as it once was. It is 44 miles west of Gympie. Since 1877 the returns for Kilkivan have been handed in with Gympie Gold Field returns. In the First Annual Report issued by the Department of Mines for the year 1877-78 the following figures appear for the field:—

ALLUVIAL MINERS.		Quartz Miners.	Total Miners.	Quantity of gold "won."	Price per oz.
European.	Chinese.				
6	6	21	33	597 oz.	£3 10s.

791. Specimens of a kind of asbolite.

These specimens, together with the cinnabar specimens, were purchased from Mr. F. Smith, and the exact locality of the cobalt deposit is unknown to the public.

Specimens of asbolite from the same locality, in the Queensland Museum, where it is termed cobaltiferous wad, have the following assays appended:—

	Per cent.
Cobalt	22.207
Nickel	3.510
Iron	29.130
Manganese	2.360
Copper	0.103

Minerals containing cobalt, except wad and pyrites, do not yet appear to have been found in New South Wales* or Queensland.

Mr. Dixon's analysis of the asbolite of Trunkay, New South Wales, gives:—

	Per cent.
Silica	25.84
Oxide iron, and traces alumina	24.72
Oxide manganese	34.93
Oxide cobalt, and traces nickel	2.11
Magnesia	1.00
Water	11.15
Alkalies, and loss	0.25

100.00

Neither the Queensland nor the New South Wales asbolites agree with any of the analyses given in Dana's Mineralogy; but, as cobaltiferous wad is essentially a decomposition product, the constituents cannot be constant.

* Description of the Minerals of New South Wales, by A. Liversidge, Esq., F.R.S., F.G.S. Published by the Department of Mines, Sydney, 1882.

The yield of cobalt is very high in the Queensland asbolite—22 per cent. Kilkivan is the only locality where cobalt has been yet been found in the colony, and Bungonia appears to be the only place where cobaltiferous manganese-ore has been found in New South Wales.*

791A. Oxide of cobalt smalt and cobalt ultramarine.

Used in the manufacture of pottery and glassware, &c., &c. (prepared by Mr. K. T. Staiger).

792. Various specimens of cinnabar in limestone.

The following note occurs in the Annual Report, Department of Mines, for 1877-8:—

"During the year 1877, the mining operations at Kilkivan have not been successful, and, consequently, a falling-off in the population and gold produced has taken place. Considerable progress has, however, been made by the Messrs. Hester, at their cinnabar works. They have for some time past kept the machines at Gympie fully supplied with quicksilver, and are now opening up communications with the Northern goldfields. The quicksilver supplied by Hester Brothers is preferred by the amalgamators at Gympie to the best article of its kind imported."

Queensland Commissioners.

793. Country rock.†

Three specimens polished by Mr. Smith. (An analysis will be found in the Appendix.)

Queensland Commissioners.

794. Country rock, from surface.

795. Two specimens of heavy spar.

Martin C. Davey, Gympie **KILKIVAN.**

796. Asbestos (inferior) from serpentinous country.

GYMPIE GOLD FIELD.

The mineral collector did not visit this great field. The bulk exhibits, however, show what is being done in mining here; and the following extracts, from the Hon. A. C. Gregory's report on the districts of Wide Bay and the Burnett, will give the practical miner an idea of the geology. The statistics are compiled from the Annual Reports, Department of Mines.

Gympie is 54 miles SE. of Maryborough, with which port it is connected by rail; Maryborough itself being a very important seaport on the Mary River, with a population of 10,750, and a ratable property of £923,000.

* Annual Report, Department of Mines, New South Wales, for 1884-85.

† Mr. De Vis has identified these specimens as eclogite.

There is on Gympie Gold Field a European population of 6,935, of whom 1,450 are employed in quartz-reefing, and 90 Chinese, whose pursuits are other than gold-mining; total, 7,025 population.

The average yield per ton of auriferous quartz crushed, as well as the total crushings and yield, is given in the following table, which has been compiled from the Annual Reports of the Department of Mines :—

Year.	Quartz Crushed.	Yield.	Average.
	Tons.	Oz.	Oz. dwt. grs.
1877	19,331	43,855	2 5 8
1878	22,358	40,320	1 16 1
1879	26,383	36,799	1 7 21
1880	22,562	39,511	1 15 0
1881	30,066	65,654	2 3 16
1882	44,720	50,164	1 2 10
1883	56,980	64,818	1 2 7
1884	62,085	112,051	1 15 17
*			

The yield of gold from quartz must not be confounded with the gross yield of gold, which latter would include alluvial and the gold won from the accumulated piles of tailings.

If all the gold (including the yield for 1885) that has been got or "won" from this field were to be melted and cast into a solid cube, the edge would measure 3 feet 9½ inches. The gilt cube No. IV. has been made to ocularly demonstrate this.

Approaching the Gympie Gold Field from the sea-coast, the principal geological feature of the country is the extensive development of the porphyritic rocks, which, rising through the carboniferous strata, form the range dividing the valley of the Mary River from the Maroochydore River, and, extending in a south direction, exhibit the remarkable outbursts known as the Glass House Mountains. Descending from this porphyritic range into the valley of the Upper Mary River, the Devonian slates appear on the surface; the stratification is apparently much disturbed, and the dip is generally at a high angle.

At Gympie these slates include a thick bed of calcareous rock, containing numerous impressions of *Spirifera* and other Devonian fossils, and also layers of rounded pebbles of crystalline felspathic rock. These fossils and boulder-beds are interstratified with a hard dark-blue rock having the external appearance of being of igneous origin; but the excess of carbonate of lime, and the fact that thin beds of the same rock are regularly interstratified with slates in other parts of the district, indicate that it is a sedimentary rock, and not a greenstone trap, as originally supposed.

The determination of the sedimentary character of this rock is of considerable importance, as it indicates that the auriferous reefs which traverse it are likely to preserve the same character to a very

* Full statistics are not yet published for 1885.

great depth; and that the working of the mines will only be limited in depth by the increased difficulties attendant on deep mining, or penetration to the siliceous slates which dip under the goldfield from the NE.

The Devonian slates in Queensland, where composed chiefly of silica with little alumina, seldom contain metalliferous veins of any importance, and it is only where lime or magnesia is combined in considerable quantity that the quartz-veins which traverse it present any notable mineral deposits; and it seems that the presence of the alkaline earths results in conditions which are specially favourable to the deposition of metals. The rocks in which the productive gold reefs at Gympie are worked belong to the series which contain a large proportion of lime, while the slates which dip below them from the north-east are nearly devoid of lime and magnesia, and have not shown indications on the surface of any valuable mineral deposits; and it may be expected that, on penetrating through the calcareous rock, the reefs will cease to be productive as they enter the siliceous slates beneath. The great thickness and high angle of dip of the lime rocks would indicate that, except near their north-east margin, there is little prospect of the siliceous slates being within the scope of even deep mining; though it tends to the inference that the southern extensions of the known reefs are likely to afford the best field for deep mining.

The general strike of the rocks on the Gympie Gold Field is NW. and the dip SW.; the auriferous veins or reefs average a little W. of N., but the band of greatest auriferous development is parallel to the strike, or NW., crossing the various reefs diagonally, so that the productive portion of each is seldom of any great length, and they are sometimes cut off by slides in the rock which dip NE. and bear NW. The N. sides of these slides seem to have been forced to the NW., and consequently these fractures have remained closed, and contain little, if any, veinstone; while the fractures which have a N. bearing, or across the strike of the rock, have opened and subsequently filled with quartz, calcspar, iron pyrites, and gold. The fractures appear to have been very irregular, and large fragments of the side-rock have fallen into them, so that the spaces subsequently filled by the veinstone are very irregular, and the deposited quartz and calcspar are sometimes so mixed with fragments of the side-rocks that it is difficult to form any accurate estimate of the average thickness of the auriferous veins.

The quartz and calcspar contain much iron pyrites, which also abounds in the side-rock near the quartz-veins; and although the gold is generally mixed with the pyrites, yet far the larger proportion is in separate and distinct pieces, and there is a tendency to form separate groups; but the manner in which the crystals of quartz, calcspar, and pyrites cut into each other, and are indented by the gold which is in other parts moulded to the angles of the crystals, shows that they were all deposited at the same period; while the lime, taking the form of calcspar, indicates that the deposition was at a low temperature.*

* Hon. A. C. Gregory's Report on the Districts of Wide Bay and Burnett.

Proceeding west from Gympie, the Devonian slates extend for about 3 miles; but on ascending the range which forms the watershed between the Mary River and Glastonbury Creek, granite, with a cap of coarse sandstone, forms the higher hills; the slates form the lower ridges as far as Widgee Creek, the south-western heads of which rise in the granite tableland on which the Black Snake gold-workings are situated. They and other adjacent gold-workings are on thin veins of quartz, which traverse the granite, and contain iron and copper pyrites with a little gold and silver.

About 4 miles to the north of the Black Snake tableland is the Kilkivan Gold Field, situated on the east side of a range of slate and serpentine hills, which trend north and south. The alluvial gold was found at the foot of a remarkable mass of quartz-rock, on the east face of a hill of blue slate; the quartz consists of very fine grains, which, by their aggregation, form a compact white stone. There are, however, small cubic cavities, with stains of oxide of iron, indicating that they have been occupied by pyrites, which has decomposed. Rolled fragments of this rock, with slate and serpentine but little quartz, formed the alluvion, and the principal deposits of metal nearly follow the existing ravines now draining the country. Gold was also found in the earth filling the fissures of the quartz-rock nearly to the summit of the hill, which is 700 feet high; but, though several shafts and tunnels were cut into it, no gold was found in the rock itself. [Since this was written gold has been found in a vein of manganese which was cut in driving another tunnel into the quartz.]

About 1 mile to the north of Kilkivan Hill, a quartz-vein, called the Rise and Shine, is being worked. The bearing is nearly north and south; dip, 80 degrees to east; thickness, 1 foot. The quartz contains iron pyrites, galena, traces of copper, and gold. The rock is serpentine slate; and the workings have reached a depth of 100 feet. The prospectors' claim, and those next, north and south, show some good specimens of gold; but as there has not been any large quantity crushed, it is difficult to form any estimate of the probable returns in the large way of working, as the gold is in very small grains, and so mixed with the pyrites that it is not easily distinguishable in the masses of quartz.*

Jacob Pearen, Esq., Breakfast Creek { 7 AND 8 SOUTH MONKLAND AND GLANMIRE REEFS.

801.	Auriferous quartz, specimen, weight 218 grammes.
802.	" " " " 86 "
803.	" " " " 77 "
804.	" " " " 63 "
805.	" " " " 212·5 "
806.	" " " " 198·5 "

* Hon. A. C. Gregory's Report on the Districts of Wide Bay and Burnett.

807.	Auriferous quartz, specimen, weight 553 grammes.
808.	" " " " 149·7 "
809.	" " " " 105·5 "
810.	" " " " 154 "

GYMPIE TROPHY.

Phoenix Co.	22	bags of auriferous quartz.
No. 1 North Phoenix Co....	22	" " "
Nos. 2 and 3 South Smithfield Co.	20	" " "
Ellen Harkins Co.	20	" " "
Nos. 3 and 4 North Glanmire Co.	20	" " "
	104	" " "

Queensland Commissioners No. 1 NORTH PHOENIX.

401 bags of auriferous quartz, purchased by the Commissioners for treatment by the model crushing machine working in the Exhibition.

MOUNT BOUPLE PLUMBAGO MINE, near Maryborough, Queensland.

C. S. A. Drain, Esq. MOUNT BOUPLE.

959. Three cases plumbago.

The Mount Bouple plumbago deposit was discovered by the exhibitor. Mr. Drain thus describes the occurrence:—"It is situated on one of the spurs of the mountain in the neighbourhood of the village of Tiaro, and is within 2 miles of the Maryborough and Gympie Railway line, at a point about 26 miles from the port of Maryborough. The lode is fully 30 feet in thickness, or, in mining phraseology, 'There is more than 30 feet between the walls,' which latter are composed of micaceous granite. As no great amount of work has as yet been done in the mine, the extent of the deposit cannot be determined further than that an 'outcrop' on the same ridge, at 400 feet elevation from the mine, proves conclusively that upon the levels being carried 800 feet inwards there will be found 400 feet of plumbago 'backs.' The accompanying exhibits are therefore purely surface ones.

"No engineering difficulties exist for the laying down of a tramway from the mines to the railway lines, and thus connecting the plumbago lodes of Mount Bouple (*via* Maryborough) with the port of London."

BOWEN.

Rev. W. F. Tucker, Bowen HAPPY VALLEY, Bowen.

960. Three specimens of marcasite in quartz.

961. Three " magnetic iron-ore.

IPSWICH.

John Knox, Esq., Brisbane *Ipswich.*

962. Three specimens of serpentinous country rock.

963. Two " country rock.

964. Two " chromite.

This chromite is found 7 miles to the west of Ipswich. Mr. Williams, of Melbourne, kindly furnishes the following report. The serpentine has a strike NW. and SE., with an underlie to W.:—"The chromite is found in pockets in the serpentine, no distinct vein having been yet discovered. These pockets may be the result of the degrading of the serpentine; the chromite, from a vein or lode from a higher level of the hill, having also degraded and lodged in the irregularities of the rock at a lower level."

Mr. John Harris, Brisbane street, Ipswich.

XLIV. Bulk specimen of chromite.

TOWNSVILLE.

L. Koledas, Esq., Townsville.

XLV. Argentiferous sulphides and carbonates of lead assaying from 100 to 2,500 oz. silver per ton, and from 1 to 5 oz. gold per ton.

The specimens come from the Hero, Heroine, Eureka, Lady Sarah, and Alpha Mines.

CALLAN'S KNOB, MOUNT MORGAN, ROCKHAMPTON.

Queensland Commissioners.

965. French chalk(?). (An analysis will be found in the Appendix.)

966. Iron pyrites from No. 2 Tunnel.

967. Quartz from same tunnel.

968. Quartzite with specks of iron pyrites from same tunnel.

969. Country rock, No. 1 Tunnel, face.

970. Country rock, No. 1 Tunnel.

971. Quartz rock, No. 3 Tunnel.

DARLING DOWNS.

Hon. A. C. Gregory.

972. Exhibit of zeolites.

Mr. Gregory has identified this zeolite as chabasite. It occurs in the basalt of the downs. There are specimens of stilbite in the Queensland Museum from the same locality. Sloanite has also been identified from the basalt of Darling Downs.

NEBO GOLD FIELD.

*Exhibited by W. S. C. Adrian, Esq., } MOUNT ORANGE COPPER MINE.
Mt. Pleasant, Mackay.*

- 973. Specular iron-ore and malachite.
- 974. Crystalline chalcopyrite.
- 975. Specular iron-ore containing copper.
- 976. Azurite and atacamite.
- 977. Cupriferous specular iron ore.
- 978. Tetrahedrite.
- 979. Chalcopyrite, with crystals of iron pyrites in the form of pentagonal dodecahedra.
- 980. Cupriferous hæmatite.
- 981. Hæmatite, with malachite and azurite.
- 982. Cupriferous specular iron-ore, with hydrated oxide of iron.
- 983. Black oxide of copper, malachite, and azurite.
- 984. Chrysocolla, azurite, and hæmatite.
- 985. Quartzite containing copper pyrites.
- 986. Black oxide of copper, azurite, and malachite.
- 987. Chalcopyrite.
- 988. (The analysis and remarks on this mineral will be found in the Appendix.)

Messrs. Reckitt and Mills EDITH MARY P.C.

- 988A. Specimens of gold in quartz.

These specimens come from various depths ranging between 25 and 120 feet. The shaft is 135 feet down, and the reef is from 2 to 7 feet thick.

Mr. G. Francas' Exhibit from Mackay District.

- 989. Agate.
- 990. } Specular iron-ore.
- 991. }
- 992. Quartz pebble, with moving bubble in centre.
- 993. Amethysts.
- 994. Agates.
- 995. Agates.
- 996. Chert and chalcedonies.
- 997. Waterworn quartz pebbles.
- 998. Wolfram, in quartz.
- 999. Twelve specimens molybdenite in quartz.

CLONCURRY GOLD FIELD.

If all the gold (including the yield for 1885) that has been got or "won" from this field were to be melted and cast into a solid cube, the edge would measure 2 feet and nearly 7 inches. The gilt cube No. VIII. has been made to ocularly demonstrate this.

R. H. Sheaffe, Esq. ... CLONCURRY COPPER SMELTING CO.

1332. Auriferous hæmatite.

MOUNT MANTONI, Charters Towers.

1333. Black and red oxides of copper, with native copper and malachite.

1334. Black oxide of copper.

Cloncurry Copper Mining Co. ... { DUGALD RIVER, 45 miles NW. of Cloncurry.

1335. { Native copper, with red and black oxides of copper, show-
1336. { ing crystals of calcite and incrustations of malachite.

1337. Black and red oxides of copper, with malachite.

1338. Black and red oxides of copper and native copper.

1339. Same as 1335 and 1336.

1340. Black and red oxides of copper and malachite.

Cloncurry Copper Mining Co. ... VARIOUS LODES, SW. of Cloncurry.

1341. Malachite, with calcite.

1342. Malachite, with black oxide of copper.

1343. Tetrahedrite, malachite, and quartz.

1344. Red oxide of copper and malachite.

1345. Cuprite and native copper, with incrustations of carbonates.

1346. Bulk specimen of cuprite and native copper, with incrustations of malachite.

1347. Cuprite, tetrahedrite, and carbonates of copper.

1348. Four specimens native copper, with cuprite and malachite.

1349. Four specimens native copper, with crystalline cuprite.

1350. Cuprite and malachite.

1351. Tetrahedrite and malachite.

1352. Three specimens cuprite and carbonates of copper.

1353. Four specimens cuprite (massive and crystalline), with malachite.

1354. Two specimens native copper changing into cuprite.

1355. Two specimens cuprite.

1356. Two specimens native copper and cuprite.

1356A. Bismuthite containing gold.

1357. Bulk specimen of cuprite and malachite.

1358. " " " "

1359. " " " "

1360. " " " "

1361. " " " "

1362. " " " "

Cloncurry Copper Mining Co. { HOMEWARD BOUND MINE, 45 miles
east of Cloncurry.

1363. Bulk specimen of malachite.

Queensland Commissioners TOP CAMP.

1364. Specimen of gold, bismuth, and ironstone.

The gold in the specimen weighs about 5 oz.

R. H. Sheaffe, Esq., Cloncurry... .. LEICHHARDT RIVER.

XLVI. Block of carbonate of copper, weighing $1\frac{1}{2}$ tons, assaying 27·5 per cent. of copper, obtained at surface of lode 25 feet wide.

This specimen was exhibited at the Melbourne Exhibition of 1881, and is the property of the Kelvin Grove Museum, Glasgow.

OCCURRENCE OF COAL IN QUEENSLAND.*

There is probably no part of the world where the coal deposits are developed so extensively and uninterruptedly as on the eastern side of the continent of Australia. It is only recently that this fact has been ascertained, and outside Australia it is scarcely at all known. Within the last few years the colonists of Queensland have done much to ascertain the mineral riches of a great portion of the territory; this has resulted in the discovery of many large and valuable fields of coal. These discoveries have been so recent that they have hardly had time to become generally known, or if they had, they could not have failed to command attention. The colony is so near to the Indian and Chinese ports, as well as those of the Pacific islands within the tropics, that it is sure to secure an extensive coal trade when its resources are known.

It may be necessary to point out what are the carboniferous resources of Australia, in order to show that the extent and uniformity of its coalbeds are probably unrivalled in the whole world.

It is well known that the main mountain chain of Australia is on the eastern side of the continent. At the north and south ends of this cordillera there is scarcely more than two or three miles between it and the Pacific Ocean. Towards the centre of the continent, or about the tropical line, the dividing range sweeps inland, leaving an immense area of river plains, 200 or 300 miles wide, intervening between the

Being a résumé of pamphlet on "The Coal Resources of Queensland," by the Rev. J. E. Tenzon-Woods, F.G.S., F.L.S., &c.

continental plateau and the sea. It may be generally stated that on the area of river plains, whether wide or narrow, coal is found. Neither the colony of Victoria nor South Australia contain any important coal deposits.

Even where the strip of river plain between the mountains and the sea is very narrow, there is still space enough for the coal deposits to be rich and abundant. Thus, at Bulli, and the Illawarra country generally, the mountain range comes within three or four miles of the sea, and yet in the intervening narrow area very rich coal-mines are developed. It is also true, however, that the more extensive the area of plains between the mountains and the sea, the larger the area within which coal is likely to be found. Thus, in the basin of the Brisbane River, which is also bordered by other extensive river basins, the coal deposits are largely developed. What may be called the Moreton Bay area, comprising many thousand square miles, may safely be said to be one mass of coal deposits. It is in this that the celebrated Ipswich collieries are found, to which reference will presently be made. [The whole of the Darling Downs and the country extending west to the Warrego River are now proved to contain extensive deposits of coal.—A.W.C.] Again, in the basin of the Fitzroy River, near Rockhampton, comprising that of the Dawson and Mackenzie Rivers, there are constant indications of coal.

It appears evident that Queensland is likely to be more abundantly supplied with coal than any other part of Australia, since no colony has so much country within her limits in which coal is manifested. The area of plain between the mountain system and the sea is much wider and more continuous.

The age of the Queensland coalfields may be considered that of the Jurassic. Intimate relations have been discovered between the Indian coal-beds and those of this continent. Genera such as *Ptilophyllum*, which have hitherto never been found out of India, have been discovered in Queensland, with other forms of *Equisetum* and *Phyllothea*, which belong to the Jurassic deposits of Europe and Asia. In New South Wales, the older coals of Newcastle and Illawarra are of Permian and Triassic age, overlaid by a thick sandstone formation full of plant remains of Jurassic age, containing many beds of shale or impure coal of vegetable origin, but no coal of commercial value. Small and insignificant seams of coal occur in the same formation, in the colony of Victoria, at Cape Otway, near Geelong; and in Western Australia; but never of sufficient thickness to be workable. In Queensland the same formation covers the greater part of the basin of the Brisbane River, and contains some of the best coal-seams in the colony, including the abundant carboniferous deposits of the Ipswich basin. From this it will be seen how erroneous are those conclusions which are formed on the experience of one or more districts. As the Jurassic terrestrial formations in many places in New South Wales and Victoria are barren of coal it has been concluded that coal in the same beds need never be looked for. The beds of India and Queensland are striking instances to the contrary.

I shall now proceed to notice rather more in detail the various coal deposits of this colony.

IPSWICH BASIN.

The whole of the interior between the coast at Moreton Bay and the dividing range consists of oolitic coal measures lying unconformably upon highly inclined palæozoic rocks, and covered by volcanic rocks in a few places, and by eolian sandstones in others. At Cape Moreton the headland shows a good section of the coal-bearing sandstones, having the usual dip of about 14 degrees. At Ipswich, on the Bremer River, a little west of its junction with the Brisbane River, about 24 miles from Brisbane, the outcrops of seams of coal are numerous and rich, and this locality has been in consequence the principal centre of the coal-mining operations from an early period in the history of the colony. The seams lie on each side of the river valley, and at no great distance from the bed of the stream. They have been disturbed by a few faults, though the downward or upward shifting is never more than a few feet. There is also a volcanic dyke and an outflow of doleritic lava, which seems to mark a clear line of division between the coal deposits on one side of the river and the other. Though the coal varies somewhat in particular seams and at certain collieries, it has a generally uniform character. It is a bright bituminous coal, with veins of brighter lustre running irregularly through it. It does not soil the fingers nearly so much as some of the Newcastle coals, and there is less of the mother-of-coal or mineral charcoal between the bituminous seams. It ignites very easily and burns very freely, giving an oily flame and yielding much black smoke. The percentage of ash is about an average of 10, sometimes as low as 6. It is usually brittle, and breaks into cubical masses. As a rule it cokes well, and is much esteemed both for gas and steam, being largely used for both purposes in the colony. The collieries may be divided into two groups, those which are on the north and those which are on the south bank of the Bremer River. On the north side one of the principal is the Waterstown Mine, worked by two or three shafts, all on the banks of the Bremer. Of the coal from this mine Mr. A. C. Gregory, Government Geologist, late Surveyor-General, reports:—"The coal is a fairly hard coal, cokes well, and is a good steam-coal. The following is the analysis:—Fixed carbon, 62; volatile hydrocarbons, 25·2; ash, 12·8." Above the seam there is about 4½ feet of splendid fire-clay, which will no doubt be utilised in the course of time. The seams connected with the Waterstown Coal Field are the Edina, Eclipse, Tivoli, and Old Tivoli.

The **ROSSEND MINE** (Lindsay's) adjoins the Waterstown. It is worked by one shaft on what is supposed to be Bell's seam.

The **EASTWOOD MINE** is small at present; the seam is about 7 feet thick, but there are several thin bands of shale all having a dip of 7 degrees to the south-east. The coal is bright and bituminous, but

very brittle. The specific gravity, according to Gregory's analysis, is 1.40; volatile hydrocarbons, 25; fixed carbon, 68; ash, 12 per cent. It makes an excellent coke.

No geological survey has been made in detail, and therefore no data can be given as to the distance of these seams from one another. The faults appear to be few and slight. The coal of these various seams is of a uniform quality; it is easily ignited, burns freely, and the amount of fixed carbon varies but little. The average of many different analyses gives fixed carbon, 60; volatile hydrocarbons, 28; ash, 8; water, 1½ per cent. Practically it seems as if the supply was unlimited, and all the conditions favour its being brought to market at a cheap rate. The dip of the seams is slight, so that they are all worked by tunnels; the thickness of the seams is just such as will be profitable without requiring that expensive timbering which very thick seams demand. There is no water to contend with, and, finally, the slack coal can be all utilised for coke. From the engineers of the Gasworks in Brisbane there is a statement that in a trial of 71 tons the average was 9,286 cubic feet of gas per ton, while in Ipswich the average was a little higher. The coke weighed out nearly 13 cwt. per ton used. Founders of iron, with brass and locomotive engineers, give equally valuable testimonials in its favour, while as a house-coal it is largely used.

SOUTHERN SEAMS.—On the south side of the river there are many workings on seams which appear to be identical with those of the north, but nothing certain can be alleged on this point, no geological survey having been made. There is a fault in the valley of the river and a volcanic dyke. There is an undulating tract of basalt, having a length of 4 miles south-west from the Bremer River, and a breadth of 2 miles from Bundanba Creek to the boundary of the town of Ipswich. The basalt is a dolerite with olivine, magnetite, and microliths of felspar. I need only mention some of the principal workings for coal:—

THOMAS MINE.—The seam is nearly horizontal with a slight southerly dip from 3 to 6 feet thick, and several bands of shale. The coal is brittle. Mr. Thomas works a seam of coal at Aberdare, which is 8 to 10 feet thick, but giving about 5 feet of workable coal excellent for steam purposes; the percentage of fixed carbon, volatile hydrocarbons, and ash, being on an average respectively—63, 30, and 10. It cokes fairly. This colliery supplies some Government contracts, the British-India Mail Company, the Melbourne S.S. Company, besides local consumption.

NEW CHUM SHAFT.—At Bundanba there is a colliery worked by a pit (New Chum Shaft), the property of Mr. Gulland, who has the contract for supplying the Australasian Steam Navigation Company. The shaft is about 220 feet deep, tapping two seams, the lower one of which only is worked. The latter shows in all about 27 feet of carbonaceous matter, but of this 4 feet to 4 feet 8 inches is good clean coal without any partings or shale. The dip is about 1 in 9, a little east of south. It is a good, firm, shining coal, with much mother-of-coal in the partings; yet it does not soil the fingers as much as other

coals on the field. Mr. Gulland has other properties on both sides of the river, and he calculates, from the report of Mr. R. Henderson, Mining Engineer, that he has over 4,000,000 tons of coal available for mining purposes.

LINDSAY'S.—The Braeside Shaft is a mine of Mr. Lindsay's, rather over a mile from the New Chum. The workings are a drive along the seam, which is 8 feet thick. The coal is very similar to the last. There is another shaft close by, 60 yards deep, on a second seam of superior coal.

SOUTHERN COALFIELDS.

All around Pine Mountain and Peak Mountain, and for a distance of many miles to the south and west, there are outcrops of coal which are still in need of exploration, and will hereafter considerably add to the coal resources of Queensland.

WALLOON COLLIERY.—This colliery is situated 6 miles west of Ipswich, and consists of three seams. The first crops out on the surface with a dip to the south-west of 1 in 9. The seam is compact, with about $4\frac{1}{2}$ feet of coal. The second seam is 50 feet below, with 5 feet 6 inches of good coal. A third seam is found 40 feet deeper, with a seam of about 5 feet in thickness. This coal differs entirely from all other seams found around Ipswich. It is perfectly clean and compact, and does not soil the hands. It is not brittle, so there is little or no slack in the handling. It has a smooth, bright, jet-like lustre, with bright bituminous streaks. As a gas-coal it has no equal in the colony, and also as a house-coal. It burns so freely that it may prove very valuable as an oil-coal. The average of a number of proximate analyses would give a percentage of 50 fixed carbons, 40 hydrocarbons, 6 of ash, 4 per cent. for loss, moisture, and other ingredients. Some specimens do not coke well; others yield about 50 per cent., bright and well swollen up.

The difference of the character of this coal would lead to the suspicion that there might be a difference in age from that of the Ipswich seams. But the fossils are the same—namely, *Thinnfeldia odontopteroidea* (Morris); also, is found a great abundance of a fossil *Equisetum* (*E. rotiferma, nobis*) which is not observed elsewhere. The species appears to be new, but closely allied to one found in the Rajmahal coal-beds of India, and in the oolitic coal of Scarborough in Yorkshire.

ROSEWOOD.—Four miles further west coal has been found near the Rosewood Station. The seam is of excellent quality, but only $1\frac{1}{2}$ feet thick.

GATTON.—Ten miles south of Gatton, which is 60 miles from Brisbane, a fine seam of coal crops out on Blackfellows' Creek. This, according to Mr. Gregory, contains about 9 feet of workable coal, which is horizontal, and offers great facilities for working. The coal is a hard cannel coal of a specific gravity of 1.29. Its analysis shows fixed carbon 36, volatile hydrocarbons 47, ash 17 per cent. At Flagstone Creek, at the foot of the Main Range and 6 miles from Toowoomba, a seam of a similar character, but smaller, is found.

COAL ON THE PLATEAU.

The Main Range is, generally speaking, a volcanic plateau lying on the coal measures, with eolian sandstones often intercalated between. Wherever the volcanic rock is interrupted the coal formation crops out over many hundreds of square miles. I extract from Mr. Gregory's report some portions describing richer deposits on the Darling Downs:—

Six miles WSW. from Cambooya railway station, in the bed of Hodgson's Creek, large blocks of coal, some exceeding 1 cwt., have been drifted out of the waterholes. The coal is found along the channel of the creek for a distance of two miles, in a condition which indicates that it has only been moved a few yards from the original seam. The coal is of excellent quality, being hard, and capable of standing carriage and exposure to wet without injury. It does not make good coke. Specific gravity, 1.33; volatile in coking, 45; fixed carbon, 42; ash, 13 per cent.

CLIFTON.—The Clifton Coal Mine is situate 2 miles beyond the Clifton railway station, close to the east side of the line. Two shafts have been sunk, and a bed of coal 4 to 5 feet thick is worked at a depth of 60 feet; a second seam of 2 feet at 80 feet, and a third of 1½ feet at 100 feet, have been cut in the principal shaft.

The upper seam produces good coal, varying from bright bituminous to dead-black oil coal, all being very hard and tough, so that it bears carriage without breaking. It produces a high percentage of gas or oil, according to the mode of treatment. Specific gravity, 1.26 to 1.35; volatile in coking, 48; fixed carbon, 42; ash, 10 per cent.

The second seam is better suited for coke, as it cokes in heating.

The lower seam is very hard oil coal. Specific gravity, 1.32; volatile in coking, 47; fixed carbon, 37; ash, 16 per cent.

Owing to the porous character of the basalt which covers the coal rocks to the eastward, and the edge of which is between the two shafts, the mine is much troubled with water, and the roof being of soft shale much timber is required to secure the workings; but these difficulties will probably decrease as the workings progress on the rise of the seam, the present workings being nearly in the lowest part of the plain.

Coal has been found in Clifton Creek, to the north-west of the Clifton Mine; also in a well sunk through basalt at the head station; while the carboniferous sandstones and shales are largely developed to the south-west.

ALLORA.—Coal was worked near Allora, about two miles east from the Hendon railway station, and the coal supplied for use in the locomotives on the Warwick Railway. The seam was not more than two feet thick and has been abandoned.

The town of Warwick is situated on an outcrop of the carboniferous sandstone, containing great quantities of fossil wood changed mostly to iron-ore.

It should be mentioned that the Clifton Mine is not now worked, owing to the difficulties and expense of transit; but when a market is opened up from the present railway to deep water on the south side of Brisbane, all these difficulties will be overcome. The basins on the plateau are geographically older than those of Ipswich, fossils being found of Lias age, notably the well-known *Otozamites mandeslohi*. This is found very widely distributed in Europe, Asia, and Africa, and always in Liassic deposits.

Mr. Gregory adds:—"And on Farm Creek, fourteen miles from Warwick, the outcrop of a large seam has been worked for the supply of the steam mills.

"The general character of the coals found between Walloon and Warwick is that of cannel coal; it does not cake in coking, gives a large percentage of gas, or oil and paraffin, according to its treatment at a high or low temperature. Its hardness renders it very suitable for export. It burns very freely and leaves a soft white ash. From the small proportion of fixed carbon, and its not caking, it does not produce good coke, but a charred coal, which, however, burns well; consequently, it is not well adapted for blast furnaces, though well suited for reverberatory furnaces. As a steam-coal, it is best suited for stationary or marine engines, the strong steam blast of locomotives being apt to blow it through the tubes. It is a very high-class household coal."

NORTHERN COALFIELDS.

BURRUM RIVER.—Between the Mary River and the Burnett the coal formation reappears, and several most valuable seams of coal crop out on the Burrum River, about 18 miles a little west of north from Maryborough.

The principal colliery is that of the Queensland Land and Coal Company. This colliery has one shaft, 10 feet square, which cuts what is called the Beaufort seam. This shows 3 feet 8 inches of good hard coal, excellent for fuel, steam, or other purposes. An expenditure of £17,000 has already been made in developing the property; besides this, a complete rolling-stock, steam saw-mill, and brick-making machine, have been put on the ground. The works are the largest in the colony. On the area of land belonging to the company, there is calculated to be between 4,000,000 and 5,000,000 tons of the Beaufort seam available.

There are two coal mines on the south side of the Burrum River—Walsh's, with two good seams, and Torbancelea, with one seam of very good coal—producing about 500 to 600 tons per week.

BURNETT RIVER.—Sixty miles north of the Mary is the Burnett River. The town of Bundaberg is situated thereon. At about eighteen miles from the mouth, close beside the railway, there are five or six seams of coal cropping out. The coal is of that compact character which has been described as peculiar to the seams at Walloon. It is very valuable, but as yet none of the coal is worked. The road from the

coast to the coal-seams is perfectly level, and fifteen miles of it are already accomplished by railway. An available market is only required to cause this valuable deposit to come into use.

DAWSON AND MACKENZIE RIVERS.—Two of the principal tributaries of the Fitzroy River (on which Rockhampton is built) flow through a coal basin of the same age as the rich Newcastle seams of New South Wales. This is the basin of the Mackenzie and Dawson Rivers, forming an immense area of many thousand square miles. In many places beds of carbonaceous sandstone crop out, full of the common coal fossils of Newcastle (N.S.W.), such as *Glossopteris browniana*, *Spheropteris plumosa*, &c. These are never intermingled with any of the characteristic fossils of the Ipswich coal basin, such as *Alethopteris australis*, *Podozamites distans*, &c. No boring has yet been attempted, but it is beyond doubt that seams of very valuable coal may be expected where these fossils occur. Cracow Creek, on the Dawson, and Weelwondongera Creek, on the Nogoa, are both places which might be advantageously tested.

BLACKWATER.—At a short distance beyond Blackwater, on the Central Railway, 120 miles beyond Rockhampton, a seam of coal was found in cutting through an embankment. It was a very sulphurous coal, but, if boring were persevered in, other seams of good coal would surely be found.

DRUMMOND RANGE.—At the Drummond Range, between Withersfield and Bogantungan, an anticlinal axis of a formation is crossed which, by its fossil plants (*Lepidodendron*, *Calamites*) most certainly belongs to the lower carboniferous of Europe. This locality is 216 miles west of Rockhampton.

BOWEN RIVER.—Many large seams of coal of palæozoic age have been found on the Bowen River, but none of them are available, as repeated intercalations of volcanic matter has destroyed the seams.

TOWNSVILLE.—On the railway line, between Townsville and Charters Towers, indications of coal have been met with which require further investigation.

PALMER RIVER.—Coal has been known in the neighbourhood of the Palmer River since 1872. The seams are small but of excellent quality; and, according to Mr. Jack, Government Geologist, between the ages of Carboniferous and Permian.

Mr. Tenison-Woods concludes his pamphlet with the following words:—"In conclusion, it may be said that as Queensland is only partially explored, and, geologically, scarcely explored beneath surface except on the gold and tin mines, its mineral riches are but little known. Notwithstanding, the fact that the coal formations cover so vast an extent of territory, and so many valuable coalfields having been discovered, makes me confident in predicting that its resources in coal are enormous—are equal, if not superior, to any other colony, and will raise her shores to be in the end the grand coal emporium of the Southern Hemisphere."

Messrs. Stafford Bros. BUNDANBA MAIN SEAM.

XLVII. Fair sample of coal.

Mr. Gregory reports on this coal as follows:—"A good hard steam-coal with cubic fracture; cokes well; 100 lbs. of coal evaporates 514 lbs. of water from 72 degrees to steam at 20 lbs. pressure in a vertical 4 h.p. engine; ash 16 per cent. Laboratory tests gave following results:—

Volatile in coking	...	...	...	...	287
Fixed carbon	...	...	...	...	640
Ash	...	...	...	...	73

1,000

"The above results show that this coal has an economic value equal to the average of coals from Newcastle, New South Wales."

The Borehole Coal Co. BUNDANBA.

XLVIII. Two cases of coal from 9 ft. seam, worked on incline 1 in 3 stoop and room.

XLIX. Two cases of coal taken from the 4 ft. 6 inch seam.

First-class steam-coal.

L. Two cases of coal taken from the 3 ft. 6 inch seam; worked on incline of 1 in 3 stoop and room.

First-class steam-coal.

LI. Sample of coal from 4 ft. seam

Good steam and gas coal.

Lewis Thomas, Esq. ABERDARE COLLIERY, Bundanba.

LII. Four boxes of coal.

Mr. Gregory reports on this coal as follows:—

"A good moderately hard coal, with curved fracture; makes an excellent hard coke; burns freely, leaving 8 per cent. of soft ash. 100 lbs. burned in a 4-h.p. vertical engine evaporated 561 lbs. of water from 72 degrees to steam at 20 lbs. pressure.

Laboratory tests give the following results:—

Volatile in coking	...	...	...	...	323
Fixed carbon	...	...	...	...	629
Ash	...	...	...	...	48

1,000

"This sample of coal is superior to all the other Ipswich coals as a steam-coal, for coke, and smiths' or furnace work, and has a higher economic value than the average of coals from Newcastle, New South Wales."

James Robertson, Esq. ... { TORBANELEA COLLIERY, Maryborough,
Queensland.

LIII. One case of coal, showing depth of seam from top to bottom.

"The mining property of Torbanelea is situated about 15 miles north of Maryborough, on the Burrum Railway. The coal is conveyed by rail from the pit to the wharves, a distance of 16 miles. A private branch connects the pit with the public railway, and the coal is loaded by steam-crane into vessels at a cost for carriage, &c., of 2s. per ton, the price at the pit's mouth being 11s. per ton. The coal is of a rich, bituminous, bright character, tender in structure. For steam purposes, 1 lb. of Torbanelea coal evaporates $8\frac{1}{2}$ lbs. of water; for gas, 1 ton yields 10·250 cubic feet of 15 candles' brilliancy, and makes a very strong metallic coke, proving this coal to be of the very best description. There are 12 inches of fire-clay separating the upper part (8 feet 6 inches) from the lower part (32 inches) of the Torbanelea seam. Three other seams of coal are known to underlie that now being worked.

The Queensland Collieries' Company, Limited Howard.

LIV. Block of coal.

BUILDING STONES.

J. C. Baird, Esq. Cooktown.

1365. Two rough blocks of syenitic granite.

Queensland Commissioners Herberton.

1366. Two specimens of marble.

Queensland Commissioners Ravenswood.

1367. Two specimens of syenite.

Queensland Commissioners Gladstone.

1368. Two specimens of dark marble.

1369. " " "

1370. Dark marble, splashed with red oxide of iron.

1371. Dark marble.

1372. Red marble.

Queensland Commissioners COASE'S HILL, Gladstone.

1373. Two specimens of white marble, stained with green and brown oxides of iron.

John Saunders Bell, Esq. GRANITE CREEK, Gladstone.

1374. Two specimens of black granite.

Queensland Commissioners FACING ISLAND, Gladstone.

1375. Two specimens of brown sandstone.

1376. Two rough blocks of syenite.

1377. " " " "

Rockhampton Local Committee Rockhampton.

1378. Two specimens of marble.

Queensland Commissioners STANWELL, Rockhampton.

1379. Two specimens of white sandstone.

1380. " " brown "

This stone gets very hard on exposure. Arriseses of public buildings in which it has been used are as perfect as the day they were put up. It has been used for the following public buildings in Rockhampton :—Church of England, Telegraph Office, Cook's Buildings, Bank of Australasia, and various frontages in East and West streets. The price in Brisbane is quoted in the *Courier* of the 5th January, 1886, at 3s. 6d. per cubic foot.

1381. Two specimens of pink marble.

1382. " " " with darker veins.

1383. Dark marble.

R. W. Le Grand, Esq. WOOLUMBONG, near Ipswich.

1384. Two specimens brown sandstone.

Peter Brown, Esq. Ipswich.

1385. Two specimens of white sandstone.

1386. Dolomite.

1387. Two specimens of basalt.

Queensland Collieries Co., Limited Howard.

1387A. Freestone.

J. A. Pearson, Esq. HELIDON No. 1 QUARRY.

1388. Two specimens of white sandstone.

This is a pure white sandstone, and is taken from a quarry 2 miles from the Helidon railway station. It is situated on the top of a ridge, on the edge of a deep gully, and extends with 40 chains' frontage to the gully, running right through the ridge and cropping up in another gully 15 chains away, both gullies running parallel. The quarry is opened and in working order, with a large quantity of stone lying ready in large blocks of from $\frac{1}{4}$ to 7 or 8 tons each. The Colonial Architect has specified the stone from this quarry to be used for building the upper stories of the Public Offices, Brisbane.

1389.

This is brown sandstone taken from No. 2 quarry, which is situated on the top of a very high ridge, and presents a grand show of large blocks 60 and 70 feet long by 20 feet high. It has a frontage of 30 chains to a deep gorge of 300 feet. There are two terraces which form two waterfalls, with abundance of ferns, tree-ferns, and palms 50 or 60 feet high. It is situated 4 miles from the Helidon railway station, and contains an almost inexhaustible supply of stone; it is a very strong stone, and is of a pretty dark colour. It is intended by the Colonial Architect to be used in the construction of the basement of the Public Offices, Brisbane.

1390. Two specimens of a bluish sandstone.

It comes from No. 3 quarry, which is on the same ridge as and adjoins No. 2 quarry. The stone is very pretty in colour, and capable of taking a high polish. It is intended to use this stone for the inner embellishments of the Brisbane Public Offices. This stone is strong, exceedingly fine and valuable, and there is evidently a large quantity of it, although the quarry so far has not been fully developed. The two former quarries are now in full working order.

At the present time Mr. Pearson is supplying stone from No. 2 quarry for the Quartpot Creek Bridge, Stanthorpe, for the Border Railway.

Queensland Commissioners LAWN HILL, near Normanton.

1391. Limestone.

W. Grieve Warwick.

1392. Limestone.

1393.

"
This stone is burnt for the manufacture of lime, as well as being used for a building stone.

Queensland Commissioners Moggill Ferry.

1394. Two specimens of sandstone.

The following information on these sandstones has been kindly furnished by the Hon. A. C. Gregory, and formed part of a series of his private notes on the examination of the suitability of various sandstones for the construction of the South Brisbane Dry Dock:—

No. I. or Lower Bed.

A moderately fine grey sandstone, of medium strength.

Absorbs, of water ...	...	...	3.04 per cent.
S. Gr. ...	...	...	2.40
Weight per cubic foot ...	...	...	150 lbs.

No. II. Bed.

A medium-grained grey sandstone, works fairly well, and appears to stand weather.

Absorbs, of water	...	...	3.0 per cent.
S. Gr.	...	...	2.39
Weight per cubic foot	...	...	149.37 lbs.

No. III. Bed.

A hard, fine-grained, grey sandstone, a little irregular in texture, but a good building stone.

Absorbs, of water	...	...	3.8 per cent.
S. Gr.	...	...	2.3
Weight per cubic foot	...	...	143.75 lbs.

No. IV. Top Bed.

A compact, fine-grained, grey sandstone; works well and stands the weather.

Absorbs, of water	...	...	2.07 per cent.
S. Gr.	...	...	2.46
Weight per cubic foot	...	...	153.75 lbs.

No. V. From near junction of Bremer and Brisbane Rivers.

A moderately coarse grey sandstone; quartz and black jasper sand with white clay, cement rather weak in texture.

Absorbs, of water	...	...	2.25 per cent.
S. Gr.	...	...	2.37
Weight per cubic foot	...	...	148 lbs.

A fair building stone for ordinary purposes.

Messrs. Carroll Bros. O'CONNELL TOWN, Brisbane.

1395. Two specimens of porphyry.

A compact igneous rock, consisting of felspar base with a few quartz crystals and fragments of slate. Light reddish-brown.

Absorbs, of water, after drying at 212 degrees F.	...	...	8.8 per cent.
S. Gr.	...	...	2.14
Weight per cubic foot	...	...	133.75 lbs.
Absorbs, of water, after drying 10 days in air	...	...	7.15 per cent.
S. Gr.	...	...	2.16
Weight per cubic foot	...	...	135 lbs.*

The Roman Catholic Cathedral is built of this porphyry, the basement of the new Government Printing Offices, and various other public and private buildings in Brisbane.

In the *Brisbane Courier* of the 5th January, 1886, the prices of various building-stones are given, having been compiled by a deputation from the Operative Masons' Society which waited on the Government; and the price of this particular stone is quoted at 9d. per cubic foot in Brisbane.

* Hon. A. C. Gregory's private note-book: "Notes on suitability of sandstones for construction of dwelling-houses."

Queensland Commissioners Bundaberg.

1396. Rough block of granite.

Queensland Commissioners Marlborough.

1397. Two blocks of syenite; one rough, one worked.

Charles Rogers, Esq. Goodna.

1398. Two blocks of sandstone.

J. E. Hunt, Esq. GRANTHAM, Toowoomba.

1399. Two blocks of freestone.

This is an exceedingly good freestone, of a brownish tint.

Government House (Brisbane), the Houses of Parliament (Brisbane), and Brisbane Town Hall are built with this stone.

Mr. Gregory's observations on this sandstone are:—

"No. 1.—From a Quarry south of Woogaroo Railway Station.

"A coarse brown sandstone, consisting of about 90 per cent. white quartz sand and 10 per cent. fine quartz and clay, hardened by oxide of iron. On immersion in muriatic acid, 1 per cent. dissolved.

Absorbs, of water... .. 4.54 per cent.

S. Gr. 2.21

Weight per cubic foot 138 lbs.

"No. 2.—From a Lower Bed of same Quarry as above.

"A coarse-grained white sandstone; when crushed gave 93 per cent. of white quartz sand and 6 per cent. of white clay.

Absorbs, of water, when soaked 4.8 per cent.

Loses at red heat, of water 7.8 "

Soluble in boiling muriatic acid 1.0 "

S. Gr. 2.18

Weight per cubic foot 136.23 lbs."

The deputation of operative masons before alluded to quote the following price:—2s. 6d. per cubic foot all round.

Messrs. Campbell... ... NORTHUMBERLAND ISLANDS, Broadsound.

1400. Specimens of limestone.

The analysis is said to give—

Carbonate of lime 98 per cent.

Foreign matter 2 "

Total 100

This stone is burnt for the manufacture of lime, as well as used for building purposes.

BRICKS.

H. Friend, Esq., senr. Gladstone.

1401. Bricks.

James Harmon, Esq. Bundaberg.

1402. Twenty-three samples of bricks.

Julius Nothling, Esq. Beenleigh.

1403. Hand-made bricks.

Waterstown Brick, Tile, and Pottery Company Ipswich.

1404. Samples of shale and clay from which Waterstown bricks are made.

1405. Bricks manufactured from materials as per Exhibit No. 1404.

1406. " " " "

Peter Brown, Esq. Ipswich.

1407. Case of bricks (hand-made), from clay of neighbourhood, extensively used for building in Ipswich.

GILT CUBES.

The frustum of a pyramid and the seven cubes have been prepared with the object of exhibiting graphically the total output of gold from the colony collectively and the fields respectively. The most striking figures of the various statistics are painted thereon. The assumption is that if the gold represented by the statistics of the Mines Department were to be melted down and cast into cubic moulds the gold frustum would occupy the same space actually as the gilded artificial cubes exhibited. There are a few facts in connection with the subject that ought to be borne in mind. Firstly, the high specific gravity of gold means that the bulk is small in relation to the weight. Secondly, that the differences between the number of ounces of gold turned out of two particular goldfields may be very marked, while the difference between the cubes is hardly perceptible. As an illustration:—

	MEASURING—	CONTAINING	VALUE.
	In.	Cub. In.	£
A cube of gold	9	729	8,019
" "	10	1,000	11,000

And yet to the eye there is but little difference.

With regard to the first remark as to the apparently small bulk of the gold frustum weighing nearly 149 tons of gold, one cubic foot

of such gold is by calculation about 997·5 lbs. avoirdupois. The capacity therefore of the above weight is 332·76 cubic feet.

No. I.

The frustum of a pyramid represents the output for the whole colony. The exact figures for each year are:—

Year.	Oz.	£
1864	22,037	83,292
1865	25,339	92,938
1866	22,916	85,561
1867	49,092	189,248
1868	165,801	593,516
1869	138,221	523,045
1870	136,773	489,539
1871	171,937	616,907
1872	186,019	660,396
1873	194,895	717,540
1874	375,587	1,356,071
1875	391,515	1,498,433
1876	374,776	1,427,929
1877	430,104	1,611,103
1878	310,247	1,085,864
1879	288,556	1,009,946
1880	267,136	934,976
1881	270,945	948,307
1882	224,893	787,125
1883	212,783	744,740
1884	307,804	1,077,314
1885	311,284	1,089,494
Total	4,878,660	17,623,284

The dimensions of the frustum are:—Vertical height, 12 feet 2½ inches, side at top, 3 feet 8½ inches, side at base, 6 feet 7 inches.

No. II.—CHARTERS TOWERS AND CAPE RIVER GOLD FIELD.

The following are the figures for the annual output of gold since 1877:—

	Oz. Gold.
To end of 1877	599,000
During 1878	72,189
„ 1879	83,275
„ 1880	85,298
„ 1881	82,324
„ 1882	79,595
„ 1883	69,555
„ 1884	109,335
„ 1885	134,650
Total	1,315,221

The edge of the cube measures 4·100 feet.

No. III.—PALMER GOLD FIELD.

The following are the figures for the annual output of gold since 1877 :—

	Oz. Gold.
To end of 1877... ..	839,000
During 1878	120,238
" 1879	90,000
" 1880	65,433
" 1881	51,960
" 1882	37,339
" 1883	24,089
" 1884	15,637
" 1885	12,918
Total	1,256,604

The edge of the cube measures 4·044 feet.

No. IV.—GYMPIE GOLD FIELD.

The following are the figures for the annual output of gold since 1877 :—

	Oz. Gold.
To end of 1877... ..	625,000
During 1878	41,564
" 1879	38,453
" 1880	43,072
" 1881	67,861
" 1882	50,312
" 1883	64,818
" 1884	112,051
" 1885	86,832
Total	1,129,963

The edge of the cube measures 3·786 feet.

The Charters Towers Local Committee have arranged the same complete output in obelisk form.

No. V.—RAVENSWOOD GOLD FIELD.

The following are the figures for the annual output of gold since 1877 :—

	Oz. Gold.
To end of 1877... ..	201,400
During 1878	13,252
" 1879	15,744
" 1880	13,445
" 1881	10,195
" 1882	8,711
" 1883	13,000
" 1884	14,192
" 1885	17,641
Total	307,580

The edge of the cube measures 2·53 feet.

No. VI.—ETHERIDGE AND WOOLGAR GOLD FIELDS.

The following are the figures for the annual output of gold since 1877:—

				Oz. Gold.
To end of 1877...	...	...	...	143,000
During 1878	...	...	...	7,396
" 1879	...	...	...	15,498
" 1880	...	...	...	20,368
" 1881	...	...	...	23,020
" 1882	...	...	...	18,431
" 1883	...	...	...	18,967
" 1884	...	...	...	19,886
" 1885	...	...	...	24,000

Total 290,566

The edge of the cube measures 2·48 feet.

No. VII.—HODGKINSON AND MULGRAVE GOLD FIELD.

The following are the figures for the annual output of gold since 1877:—

				Oz. Gold.
To end of 1877...	...	...	...	59,516
During 1878	...	...	...	44,435
" 1879	...	...	...	33,675
" 1880	...	...	...	25,096
" 1881	...	...	...	15,308
" 1882	...	...	...	12,495
" 1883	...	...	...	7,505
" 1884	...	...	...	7,245
" 1885	...	...	...	5,790

Total 211,065

The edge of the cube measures 2·235 feet.

No. VIII.—CLONCURREY, CALLIOPE, ROCKHAMPTON, CLERMONT, NORMANBY, TALGAI, AND OTHER SMALL FIELDS.

The following are the figures for the annual output of gold since 1877:—

				Oz. Gold.
To end of 1877...	...	...	...	180,000
During 1878	...	...	...	11,178
" 1879	...	...	...	11,911
" 1880	...	...	...	14,424
" 1881	...	...	...	20,277
" 1882	...	...	...	18,010
" 1883	...	...	...	14,849
" 1884	...	...	...	29,458
" 1885	...	...	...	29,458

Total 329,565

The edge of the cube measures 2·58 feet.

The Mines Department have grouped these smaller fields together, but it is to be noted that the output for 1885 is *only estimated at* 29,458 (the output for 1884). The Rockhampton output Mr. Gold-Warden Cribb gives as 14,895 oz. 16 dwt. 8 grs., exclusive of the Mount Morgan returns, the gold from which is sent to the Sydney Mint, no records being published in Queensland.

MAGNIFYING APPARATUS.

The arrangement of a few of the more interesting Queensland minerals for inspection under a magnifying lens requires no particular explanation. The locality and scientific name are printed on the slides that revolve in the case.

ORGANIC REMAINS.

Nos. 1407A-1532 are a collection of organic remains representing the sedimentary deposits of Queensland.

The collection has been made by Mr. R. L. Jack, F.G.S., F.R.G.S., Government Geologist, supplemented by contributions from Mr. J. Smith, of Rockhampton, and Mr. W. H. Rands, Assistant Government Geologist.

DEVONIAN.—Nos. 1407A.-1410.

Rocks referable to the Devonian have proved abundantly fossiliferous at least at three localities, which are not represented, unfortunately, in the present collection. The late Mr. Richard Daintree, C.M.G. (formerly Government Geologist for North Queensland, and afterwards Agent-General for the Colony in London), made an extensive collection of corals from the Burdekin River Limestones, afterwards supplemented by another procured by Mr. R. L. Jack (the present Government Geologist). Speaking of the Burdekin beds, in his memoir 'On the Geology of the Colony of Queensland,' Mr. Daintree says that the "limestones, where little alteration has taken place, are a mass of aggregated corals"; and they were regarded by him as the lowest fossiliferous series in Queensland. A later and more detailed description of the Burdekin River Limestones will be found in Mr. Jack's 'Report on the Geology and Mineral Resources of the Charters Towers Goldfield' (fcap., Brisbane, 1879). The Fanning River Limestone is an extension of that at Burdekin Downs, and is described by Mr. Jack in his 'Report on the Coast Range between the Dalrymple and Charters Towers Roads.' It contains both corals and shells, chiefly Brachiopoda. Descriptions of all these fossils, by Prof. H. A. Nicholson and Mr. R. Etheridge, jun., will be found in the 'Annals and Magazine of Natural History' for September and October, 1879; and in the 'Proceedings of the R. Physical Society of Edinburgh' for 1880. A further outcrop of these Devonian rocks has been discovered on the Northern Railway about 31 miles from Townsville, and has yielded corals in abundance, several of which are represented in the present exhibit.

[The limestone of Reid Gap, Townsville and Charters Towers Railway is described by Mr. R. L. Jack, in his 'Report on the Geological Features of the Coast Range between the Dalrymple and Charters Towers Roads.']

- 1407A. *Pachystroma*, sp.
Reid Limestone.
[A species closely allied to *Pachystroma densa*, Nicholson and Murie, of the Corniferous Limestone of North America.]
- 1407B. *Pachystroma*, sp.
Regan's, 31 miles from Townsville; *R. L. Jack, Esq.*
- 1407C. *Pachypora meridionalis*, Nicholson and Etheridge, jun.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
1408. *Pachypora*, sp.
Beaconsfield, Hodgkinson Goldfield; *R. L. Jack, Esq.*
[A much altered species allied to *Pachypora meridionalis*, N. & E., of the Burdekin and Fanning River Limestones.]
- 1408A. *Amplexopora Koninckii*, Etheridge, jun., and Foord.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
- 1408B. *Alveolites alveolaris*, de Koninck, sp.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
- 1408C. *Heliolites porosa*, Goldfuss.
Burdekin beds (Fanning River Limestone), Fanning River; *R. L. Jack, Esq.*
- 1408D. *Heliolites porosa*, Goldfuss.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
- 1408E. *Heliolites porosa*, Goldfuss.
Benwell's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
- 1408F. *Heliolites porosa*, Goldfuss.
Burdekin beds (Arthur's Creek Limestone), Arthur's Creek, Burdekin River; *R. L. Jack, Esq.*
- 1408G. *Cænites*, sp.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.
[Allied to *Cænites expansus*, de Koninck, from the Devonian series of Yass, New South Wales.]
- 1408H. *Campophyllum Gregorii*, Etheridge, jun.
Regan's, Northern Railway, 31 miles from Townsville;
R. L. Jack, Esq.

1409. *Cyathophyllum*, sp.
Beaconsfield, Hodgkinson Goldfield; *R. L. Jack, Esq.*
[Portion of a large cup-coral closely resembling *Cyathophyllum helianthoides*, Goldfuss, of the European Middle Devonian rocks. This coral occurs in the limestone pebbles of the Beaconsfield Conglomerate, a bed described by Mr. Jack in his 'Report on the Hodgkinson Goldfield' (fcap., Brisbane, 1884).]
- 1409A. *Cystiphyllum Americanum*, Ed. & H., var. *Australe*, Eth., jun.
Regan's, Northern Railway, 31 miles from Townsville; *R. L. Jack, Esq.*
- 1409B. *Coral*, &c.
Beaconsfield, Hodgkinson Goldfield; *R. L. Jack, Esq.*
1410. *Gyroceras Philpi*, Eth., jun.
Northern Railway, 31 miles from Townsville; *R. Philp, Esq.*
[The Cephalopoda, to which class the present fossil belongs, do not appear, so far as present researches have gone, to be largely represented in the Devonian rocks of Queensland.]

LOWER CARBONIFEROUS, Nos. 1411-1423.

The sandstones and shales of the Great and Little Star Rivers are characterised by a marine fauna, now presented to us in the form of casts. They appear to indicate a formation homotaxially identical in part with the British Lower Carboniferous Series. An excellent description of these beds will be found in Mr. Jack's 'Report on the Geological and Mineral Resources of the Charters Towers Goldfield' (fcap., Brisbane, 1879). The Star series is believed to be identical with the Mount Wyatt beds, which were regarded by the late Mr. R. Daintree as of Devonian age. Mr. Jack also considers them to be on the same horizon as the Don River strata with Carboniferous fossils.

1411. *Lepidodendron Australe*, McCoy.
Corner Creek, Great Star River; *Messrs. R. L. Jack and P. N. Pean.* Near Harvest Home, 2 miles from Mount McConnel; *Mr. P. N. Pean.*
[The identity of this plant has given rise to much controversy and speculation as to the age of the rocks containing it. It is common to the Star, Mount Wyatt, Canoona, Broken River, and Medway River beds. By Mr. William Carruthers, F.R.S., it was referred to the little European Devonian *Lepidodendron nothum*, Unger; but Prof. McCoy is undoubtedly correct in regarding it as identical with his *Lepidodendron Australe*, from the Avon River Sandstones, Gippsland, Victoria, which are of Lower Carboniferous age.]
1412. *Knorria*.
Corner Creek, Great Star River; *Messrs. R. L. Jack and*

P. N. Pean. Near Harvest Home, 2 miles from Mount McConnel; *Mr. P. N. Pean.*

[The plant remains to which this name is applied are probably imperfectly preserved examples of *Lepidodendron*, or those which have undergone change and disintegration during and after fossilization.]

1414. *Phillipsia dubia*, Etheridge.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[This fossil has also been found in the Lower Carboniferous beds of the Don River. It is a cast of an entire individual, with shelly-test removed.]

1415. *Rhodocrinus* or *Actinocrinus*.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[Cast of a single plate of one or other of these genera.]

1416. *Fenestella multiporata*, de Koninck.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[This is not the species of this name from the Irish Carboniferous Limestone, described by Prof. F. McCoy.]

1417. *Spirifera bisulcata*, Sby.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

1418. *Spirifera*, sp.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[A small block made up of internal casts of either No. 1417, or small individuals of *Spirifera Tasmaniensis*, Morris.]

1419. *Retzia radialis*, Phillips?

Corner Creek, Great Star River; *P. N. Pean, Esq.*

1420. *Orthis resupinata*, Martin.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[A common and characteristic fossil of the Star River beds.]

1421. *Naticopsis*, sp.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[A small shell closely allied to *Naticopsis elongata*, Phillips, from the English Carboniferous Limestone.]

1422. *Euomphalus*, sp.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[A species which resembles *Euomphalus minimus*, McCoy, from the Carboniferous shale of Dunvegan, New South Wales.]

1423. *Porcellia Peani*, Etheridge, jun.

Corner Creek, Great Star River; *P. N. Pean, Esq.*

[Remains of a small and pretty species of the genus *Porcellia*, named in honour of the collector, Mr. P. N. Pean.]

UPPER CARBONIFEROUS, OR PERMO-CARBONIFEROUS.

Nos. 1423A-1474.

Under this division has been provisionally placed a series of marine fossils from the Bowen River Coalfield—the neighbourhood of Rockhampton—the Port Curtis District—certain localities in the Burnett River District—and the Gympie Goldfield. An excellent ‘Report on the Bowen River Coalfield’ (fcap., Brisbane, 1879) has been written by Mr. Jack. The strata are divisible into a lower or non-fossiliferous series; a middle group with a copious marine fauna, of an essentially Upper Carboniferous or Permo-Carboniferous age, accompanied by the much debated plant *Glossopteris*; and lastly an upper or mainly fresh-water series, with intercalated marine bands, and *Glossopteris* in abundance.

The Port Curtis and Burnett Districts have been reported on by Mr. W. H. Rands, Asst. Government Geologist, in a ‘Report on the Goldfields of Raglan, Calliope, Milton, and Cania, in the Port Curtis District, &c.’ (fcap., Brisbane, 1885). The organic remains collected by him have not yet been fully worked out, and the small number exhibited are only provisionally placed with those from the Bowen, Rockhampton, and Gympie Districts.

Another report was made some years ago on the Burnett District, by the late Mr. D’Oyly H. Aplin, entitled, ‘Report on the Geological and Mineralogical Features of a part of the South and North portions of the Burnett District’ (fcap., Brisbane, 1870).

Little appears to have been hitherto published on the organic remains of the neighbourhood of Rockhampton, although a good geological description was prepared by the late Mr. R. Daintree, C.M.G., viz., ‘Progress Report of the Rockhampton Mining District, &c.’ (fcap., Brisbane, 1870).

The fossils of the Gympie Goldfield have to some extent already been described by Mr. R. Etheridge, F.R.S., in Mr. Daintree’s Memoir ‘Notes on the Geology of Queensland,’ wherein will also be found an account of the geology. The late Mr. Aplin made a geological survey of the field, and his results were published in 1868 as a ‘Report on the Geological and Mining Features of the Gympie Goldfield’ (fcap., Brisbane, 1868).

1423A. *Glossopteris*, sp.

Upper or Freshwater Group, Bowen River Coalfield Series. Macarthur’s Creek (below Macarthur’s Coal Seam), Bowen River.

[This plant is very abundant in the Upper or Freshwater Series of the Bowen River Coalfield, and occurs associated with a marine Carboniferous fauna.]

1424. *Stenopora Leichhardtii*, Nicholson and Etheridge, jun.

Middle or Marine Group, Bowen River Coalfield Series. Pelican Creek, Bowen River; *R. L. Jack, Esq.*

[A very characteristic fossil of the Bowen River Coalfield

rocks. Several other species of the same genus are also found with this, but are not represented in the present collection.]

1425. *Stenopora*, sp.

Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*

[A species resembling *Stenopora gracilis*, Dana, from Wollongong, N. S. Wales.]

1426. *Arenicolites*.

Rockhampton Series.—Building Stone Quarry, Stanwell, near Rockhampton; *Mr. J. Smith.*

[Vertical tubes, partially hollow, or infilled with a finer substance than the surrounding matrix. They pass through the bedding of the rock, and are supposed to have been the burrows of marine worms, or allied organisms.]

1427. *Poteriocrinus? Smithii*, Etheridge, jun.

Rockhampton Series.—Rhynchonella Gully, Stanwell, near Rockhampton; *Mr. J. Smith.*

[Stem, head, and arms of a Crinoid, or "Sea Lily," to which the above name is applied in honour of the discoverer. A plaster cast taken from the impression is placed with it.]

1428. Impression of a portion of the head and arms of another Crinoid.

Rockhampton Series.—Rhynchonella Gully, Stanwell, near Rockhampton; *Mr. J. Smith.*

1429. *Poteriocrinus crassus*, Miller.

Rockhampton Series.—Encrinite Creek, Stanwell, near Rockhampton; *Mr. J. Smith.*

[A fine cast of a stem of this Crinoid, with numerous *cirri* proceeding from the sides.]

1430. Impressions of Crinoid stems, and portions of stems in relief.

Rockhampton Series.—Encrinite Creek, Stanwell, near Rockhampton; *Mr. J. Smith.*

1431. Remains of Crinoid stems in a breccia of igneous materials.

Rockhampton Series.—Athelstane Range, Rockhampton; *Mr. J. Smith.*

1432. Slab of black shale covered with impressions of a *Fenestella*, showing the non-poriferous face.

Rockhampton Series.—Fenestella Hill, Stanwell, near Rockhampton; *Mr. J. Smith.*

1433. *Fenestella fossula*, Lonsdale.

Middle or Marine Group, Bowen River Coalfield Series.—Stonehumpy Creek, Bowen River; *R. L. Jack, Esq.*

1434. *Fenestella fossula*, Lonsdale.

Middle or Marine Group, Bowen River Coalfield Series.—Coral Creek, Bowen River; *R. L. Jack, Esq.*

1435. *Fenestella fossula*, var. *deusa*, Etheridge.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1436. *Fenestella internata*, Lonsdale?
Rockhampton Series.—*Fenestella* Hill, Stanwell, near Rockhampton; *Mr. J. Smith.*
1437. *Fenestella* (various forms.)
Rockhampton Series.—*Fenestella* Hill, and Encrinite Creek, Stanwell, near Rockhampton; *Mr. J. Smith.*
[These specimens exemplify the manner in, and abundance with which these Polyzoa occur in the Upper Carboniferous rocks of Queensland.]
1438. *Protoretetpora ampla*, Lonsdale, sp.
Middle or Marine Group, Bowen River Coalfield Series.—Coral Creek, Bowen River; *R. L. Jack, Esq.*
1439. *Protoretetpora ampla*, Lonsdale?
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1440. *Protoretetpora* ?
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1441. *Protoretetpora*, or *Fenestella* ?
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1442. *Polypora* ? *Smithii*, Etheridge, jun.
Rockhampton Series.—*Fenestella* Hill, Stanwell, Rockhampton; *Mr. J. Smith.*
1443. *Rhombopora laxa*, Etheridge.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
- 1443A. *Terebratula*, sp.
Middle or Marine Group, Bowen River Coalfield Series.—Mouth of Coral Creek, Bowen River; *E. Edelfelt, Esq.*
- 1443B. *Strophalosia Clarkei*, Etheridge.
Middle or Marine Group, Bowen River Coalfield Series.—Pelican Creek, 5 miles above Sonoma, Bowen River.
[One of the most characteristic fossils of the Middle or Marine Series of the Bowen River Coalfield.]
- 1443C. *Spirifera*, sp.
Middle or Marine Group, Bowen River Coalfield Series.—Stonehumpy Creek, Bowen River; *E. Edelfelt, Esq.*
1444. *Spirifera Strzelecki*, de Koninck.
Gympie Series.—No. 6, North Phoenix Mine, Gympie, at a depth of 340 ft.; *S. Hester, Esq.*
1445. *Spirifera*, sp.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1446. *Spirifera*, sp.
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*

1447. *Spirifera vespertilio*, Sby.?
Spring Creek, Cania, Burnett; *W. H. Rands, Esq.*
1448. *Spirifera*, sp.
Hawkin's Gully, Kroombit Diggings, Port Curtis; *W. H. Rands, Esq.*
1449. *Martinia glabra*, Martin, sp.
Spring Creek, Cania, Burnett; *W. H. Rands, Esq.*
1450. *Martinia*, sp.
Three Moon Creek, Cania Diggings, Burnett; *W. H. Rands, Esq.*
1451. *Retzia*? *Lilymerensis*, Etheridge, jun.
Rockhampton Series (Lilymere Marble). — Blaenavon, Lilymere; *Mr. J. Smith.*
1452. *Orthis resupinata*, Martin.
Hawkin's Gully, Kroombit Diggings, Port Curtis; *W. H. Rands, Esq.*
- 1452A. *Derbyia crenistria*, var *senilis*, Phillips.
Middle or Marine Group, Bowen River Coalfield Series.—
Havilah Byerwin Road, 1 mile south of Rosella Creek
Crossing, Bowen River; *R. L. Jack, Esq.*
1453. *Derbyia crenistria*, var *senilis*, Phillips.
Middle or Marine Group, Bowen River Coalfield Series.
—Pelican Creek, Bowen River; *R. L. Jack, Esq.*
1454. *Productus*, sp.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
[The surface of many pieces of the Gympie chloritic rock
are covered with similar crushed *Producti*.]
1455. *Productus brachythærus*, Sby.
Rockhampton Series. — Encrinite Creek, Stanwell, near
Rockhampton; *Mr. J. Smith.*
1456. *Productus*, sp.
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*
1457. *Productus brachythærus*, Sby.?
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*
1458. *Productus*.
Spring Creek, Cania, Burnett; *W. H. Rands, Esq.*
1459. *Strophomena rhomboidalis*, var *analoga*, Phillips
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1460. *Chonetes*, sp.
Rockhampton Series.—Athelstane Range, near Rock-
hampton; *Mr. J. Smith.*
1461. *Aviculopecten limæformis*, Morris.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1462. *Aviculopecten squamuliferus*, Morris.
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*

1463. *Mytilops*, sp.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1464. *Astartella ? rhomboidea*, Etheridge, jun.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1465. *Cypricardella Jackii*, Etheridge, jun.
Gympie Series?—Mount Hamilton, 6 miles north-east of
Gympie; *R. L. Jack, Esq.*
1466. *Modiomorpha*, sp.
Hawkin's Gully, Kroombit Diggings, Port Curtis; *W. H. Rands, Esq.*
1467. *Conocardium Australe*, McCoy?
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1468. *Cleobis grandis*, Dana?
Gympie Series.—Gympie Goldfield; *Hon. A. C. Gregory.*
[Probably a young individual of this species.]
1469. *Pachydomus ?* sp.
Gympie Series.—Gympie Goldfield; *W. H. Rands, Esq.*
- 1469A. *Pachydomus ?* sp.
Middle or Marine Group, Bowen River Coalfield Series.
Stonehumpy Creek, Bowen River; *E. Edelfelt, Esq.*
1470. *Pleurophorus Randsi*, Etheridge, jun.
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*
- 1470A. *Solemya ?* sp.
Middle or Marine Group, Bowen River Coalfield Series.
Stonehumpy Creek, Bowen River; *E. Edelfelt, Esq.*
1471. *Pleurotomaria Strzeleckiana*, Morris.
Rockhampton Series.—Blaenavon; *Mr. J. Smith.*
1472. *Pleurotomaria*.
Near Yarrol Station, Burnett; *W. H. Rands, Esq.*
1473. *Pleurotomaria*, or *Platyschisma*.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
1474. *Orthoceras*, sp.
Gympie Series.—Gympie Goldfield; *R. L. Jack, Esq.*
[A terminal portion of a large specimen, with traces of
the shell-ornament remaining.]
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1475. *Glossopteris Browniana*, Brongniart.
Northern Railway, 7 miles from Townsville; *R. L. Jack, Esq.*
[A series of *Glossopteris* remains from the "supposed Coal
Measures" near Townsville.]
1476. *Glossopteris Browniana*, Brongniart.
Baird's Mine, Oakey Creek, Cooktown; *R. L. Jack, Esq.*
1477. *Glossopteris linearis*, McCoy?
Baird's Mine, Oakey Creek, Cooktown; *R. L. Jack, Esq.*

1478. *Glossopteris*?

Parting in Coal seam, Dave Colliery, Little River, Cooktown; *R. L. Jack, Esq.*

[In a 'Report on the Little River Coalfield, near Cooktown,' (fcap., Brisbane, 1882,) Mr. R. L. Jack refers to the discovery of *Glossopteris* in connection with the coal seams there, and believes the field to be of Palæozoic age. On the other hand, the Rev. J. E. T. Woods, in his interesting memoir 'On the Fossil Flora of the Coal Deposits of Australia,' has suggested a possible Triassic age for these beds.]

JURASSIC.

LOWER and UPPER JURASSIC?

Nos. 1479—1490.

1479. *Alethopteris Australis*, Morris.

Ipswich Coal Measures—Ipswich; — *Archibald, Esq.*

[From Walter Gray's seam, 400 ft. above Tivoli.]

1480. *Alethopteris Australis*, Morris.

Ipswich Coal Measures.—Bundamba, New Chum; — *Archibald, Esq.*

[From 50 ft. above second seam.]

1481. *Alethopteris Australis*, Morris.

Ipswich Coal Measures.—Bundamba, New Chum; — *Archibald, Esq.*

[From 100 ft. above second seam.]

1482. *Alethopteris Australis*, Morris.

Clifton Colliery; *R. L. Jack, Esq.*

1483. *Odontopteris odontopteroides*, Morris.

Ipswich Coal Measures.—Bundamba, New Chum; — *Archibald, Esq.*

[From 70 ft. below New Chum Upper Seam.]

1484. *Odontopteris odontopteroides*, Morris.

Ipswich Coal Measures.—Bundamba, New Chum.

[From the Bundamba upper seam.]

1485. *Odontopteris odontopteroides*, Morris.

Ipswich Coal Measures.—Bundamba, New Chum; — *Archibald, Esq.*

[From 100 ft. above second seam.]

1486. *Odontopteris odontopteroides*, Morris.

Ipswich Coal Measures.—Tivoli Mine, Ipswich; — *Archibald, Esq.*

[The Ipswich Coalfield is said to extend for about 50 miles around Moreton Bay. The plant remains associated with the coal were first described by Mr. Carruthers in

Mr. Daintree's Memoir previously quoted; again by Dr. O. Feistmantel in a work entitled 'Palaeozoische und mesozoische Flora des östlichen Australiens,' and more recently still by the Rev. J. E. T. Woods in his Memoir on the 'Fossil Flora of the Coal Deposits of Australia.' Full descriptions and figures of all the plants are given in one or other of these publications. The coal seams were reported on as long ago as 1855 by the late Mr. Samuel Stutchbury previous to the separation of Queensland from New South Wales. His Reports will be found in the Parliamentary Blue-Books of December, 1854, and July, 1855. Other descriptions have since appeared, notably one by the Hon. A. C. Gregory, 'Report on the Coal Deposits of the West Moreton and Darling Downs Districts' (fcap., Brisbane, 1876). In connection with the International Exhibition of 1872 held at South Kensington Mr. Daintree prepared a Handbook on Queensland, in which much information regarding the mines of this coal-field is given under the heading "Coal."

- 1487. *Tæniopteris Carruthersi*, Woods.
Rosewood, West Moreton; *Hon. A. C. Gregory*.
- 1488. *Brachyphyllum Australe*, Feistmantel.
Rosewood, West Moreton; *Hon. A. C. Gregory*.
- 1489. *Brachyphyllum crassum*, Woods.
Clifton Colliery, Clifton; *R. L. Jack, Esq.*
- 1490. *Zamites?* sp.
Colinton, Upper Brisbane River; *R. L. Jack, Esq.*

UPPER MESOZOIC.

?CRETACEOUS. Nos. 1491-1529c.

The fossils from rocks provisionally ascribed to this period, although rarely in a good state of preservation, are amongst some of the most interesting found in Queensland. They were originally discovered on the Upper Flinders by Messrs. Sutherland and Carson, of Melbourne, about 1866, and described by Professor McCoy. Mr. Daintree subsequently visited the fossiliferous localities, and made a more detailed collection, afterwards described in his Memoir by Mr. R. Etheridge, F.R.S. Additional contributions have since been made by the Hon. A. C. Gregory, Mr. Jack, Mr. R. H. Rands, and other explorers, from Maryborough, the Walsh River, and a few additional localities. The whole of these fossils are now under detailed investigation, and it is then hoped that somewhat more definite information will be forthcoming as to their age.

- 1491. *Ostrea (Gryptæa) vesiculosa*, Sby.
Gypsum Mine, Chellarton; *Hon. A. C. Gregory*.

1492. *Inoceramus Carsoni*, McCoy?
Flinders River Series.—Flinders River; *Hon. A. C. Gregory*.
- 1492A. *Inoceramus Carsoni*, McCoy?
Flinders River Series.—Flinders River, 13½ miles below Richmond Downs Station; *R. L. Jack, Esq.*
- 1492B. *Inoceramus*, sp.
"Rolling Downs" formation.—Aramac Well (at 244 ft.); *S. Sharwood, Esq.*
- 1492C. *Inoceramus*, sp.
"Rolling Downs" formation.—Aramac Well (at 238 ft.); *S. Sharwood, Esq.*
- 1492D. *Inoceramus Carsoni*, McCoy.
"Rolling Downs" formation.—Aramac Well; *R. L. Jack, Esq.*
1493. *Inoceramus pernoides*, Etheridge.
Flinders River Series.—Flinders River; *Hon. A. C. Gregory*.
1494. *Inoceramus pernoides*, Etheridge?
Flinders River Series, 7 miles east of Mount Cornish Homestead; *E. R. Edkins, Esq.*
[Found 200 ft. below surface in sinking a well.]
- 1494A. *Inoceramus pernoides*, Etheridge?
"Rolling Downs" formation.—Erora Station; *R. L. Jack, Esq.*
1495. *Inoceramus*, sp.
Flinders River Series.—Marathon Station, Flinders River; *Hon. A. C. Gregory*.
1496. *Inoceramus*, sp.
Flinders River Series.—Hughenden Station, Flinders River; *Hon. A. C. Gregory*.
- 1496A. *Pseudomonotis semiglobosa*, var *Rockwoodensis*, Etheridge, jun.
Flinders River Series.—Rockwood Station, Landsborough River; *R. L. Jack, Esq.*
1497. *Maccoyella Barklyi*, Moore, sp.
Maryborough Series.—Wharf Railway, Maryborough; *R. L. Jack, Esq.*
1498. *Maccoyella Barklyi*, Moore, sp.
Maryborough Series, Maryborough; *Hon. A. C. Gregory*.
- 1498A. *Maccoyella* ? sp.
"Rolling Downs" formation.—Maranda River, half mile above Mitchell Railway Station; *R. L. Jack, Esq.*

1499. *Maccoyella Barklyi*, Moore.
Walsh River; *Hon. A. C. Gregory*.
1500. *Maccoyella*, sp.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory*.
1501. *Maccoyella simplex*, Moore.
Maryborough Series.—Wharf Railway, Maryborough.
R. L. Jack, Esq.
1502. Valve of a large bivalve shell, probably allied to Nos. 1497–1501.
Maryborough Series.—Wharf Railway, Maryborough;
R. L. Jack, Esq.
1503. *Aucella Hughendensis*, Etheridge.
Flinders River Series.—Upper Flinders River; *Hon. A. C. Gregory*.
1504. *Aucella Hughendensis*, Etheridge.
Flinders River Series.—Hughenden Station, Flinders River; *Hon. A. C. Gregory*.
- 1504A. *Aucella Hughendensis*, Etheridge.
“Rolling Downs” formation.—Maranda River, half mile above Mitchell Railway Station; *R. L. Jack, Esq.*
- 1504B. *Aucella Hughendensis*, Etheridge.
Flinders River Series.—Flinders River, 7 miles above Marathon Station; *R. L. Jack, Esq.*
- 1504C. *Aucella Hughendensis*, Etheridge, sp.
Flinders River Series.—Barcoo River, 7 miles above Worthampton Station; *R. L. Jack, Esq.*
- 1504D. *Nucula*, sp.
“Rolling Downs” formation.—Aramac Well (244 feet);
S. Sharwood, Esq.
1505. *Trigonia*, sp.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory*.
[Allied to *Trigonia conocardiiformis*, Krauss.]
1506. *Nucula gigantea*, Etheridge.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory*.
1507. *Nucula gigantea*, Etheridge.
Mullett Creek, Port Curtis; *W. H. Rands, Esq.*
1508. *Nuculana?* sp.
Isis River, near Brunderberg Road, Wide Bay; *W. H. Rands, Esq.*
1509. *Cucullæa robusta*, Etheridge.
Maryborough Series.—Corporation Quarry, Maryborough;
W. H. Rands, Esq.

1510. *Cucullæa costata*, Etheridge.
Maryborough Series.—Government Quarry, Maryborough;
W. H. Rands, Esq.
1511. *Cucullæa costata*, Etheridge.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1512. *Unio Gregorianus*, Etheridge, jun.
Bundamba; *Hon. A. C. Gregory.*
[From brick clay, overlying coal. Named in honour of
the Hon. A. C. Gregory.]
1513. *Cyprina (Cytherea?) Clarkei*, Moore.
Walsh River; *Hon. A. C. Gregory.*
1514. *Cyprina expansa*, Etheridge.
Walsh River; *Hon. A. C. Gregory.*
1515. *Cyprina expansa*, Etheridge.
Flinders River Series.—Upper Flinders River; *Hon. A. C. Gregory.*
1516. *Cyprina*, sp.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
- 1516A. [*Shell.*]
"Rolling Downs" formation.—Minmi, near Roma; *R. L. Jack, Esq.*
- 1516B. *Thracia?* sp.
"Rolling Downs" formation.—Maranda River, half-mile
above Mitchell Railway Station; *R. L. Jack, Esq.*
- 1516C. [*Shell agglomerate.*]
Glanmire Block, 17 miles S.W. of Tambo; — *Goffage, Esq.*
1517. *Callista? Taylora*, Etheridge, jun.
Walsh River; *Hon. A. C. Gregory.*
- 1517A. *Callista?*
"Rolling Downs" formation, Minmi, near Roma; *R. L. Jack, Esq.*
- 1517B. [*Bivalve Shell.*]
"Rolling Downs" formation.—Erora Station, 25 miles
N.E. of Blackall; *R. Morrisby, Esq.*
1518. *Tellina Mariæburiensis*, Etheridge.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1519. *Tellina Mariæburiensis*, Etheridge.
Maryborough Series.—Government quarry, Maryborough;
W. H. Rands, Esq.
- 1519A. *Tellina*, sp.
"Rolling Downs" formation.—Bore at Muttaborra; *J. B. Henderson, Esq.*

- 1519b. *Tellina* (large sp.).
"Rolling Downs" formation.—Minmi, near Roma; *R. L. Jack, Esq.*
- 1519c. [*Bivalve Shell.*]
"Rolling Downs" formation.—Aramac Well; *R. L. Jack, Esq.*
1520. *Panopea sulcata*, Etheridge.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1521. *Panopea*, sp.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1522. *Psilomya Mariseburiensis*, Etheridge, jun.
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1523. *Mactra* (*Cymbophora*) *Meekii*, Etheridge, jun.
Walsh River; *Hon. A. C. Gregory.*
1524. *Mactra*, sp.
Walsh River; *Hon. A. C. Gregory.*
1525. *Lutraria* ?
Maryborough Series.—Maryborough; *Hon. A. C. Gregory.*
1526. *Cyrena* ? *Flindersensis*, Etheridge, jun.
Flinders River Series.—Upper Flinders River; *Hon. A. C. Gregory.*
- 1526A. [*Bivalve Shell.*]
"Rolling Downs" formation.—Maranda River; *R. L. Jack, Esq.*
- 1526B. [*Bivalve Shell.*]
"Rolling Downs" formation.—Aramac Well; *R. L. Jack, Esq.*
- 1526c. [*Univalve Shell.*]
"Rolling Downs" formation.—Erora Station, 25 miles N.E. of Blackall; *R. Morrisby, Esq.*
- 1526D. [*Univalve Shell.*]
"Rolling Downs" formation.—Erora Station, 25 miles N. E. of Blackall; *R. Morrisby, Esq.*
- 1526E. *Ammonites*, sp.
"Rolling Downs" formation.—Balcargine Station, Central Railway (370 miles); *E. Sexton, Esq.*
- 1526F. *Ammonites* (small sp.)
"Rolling Downs" formation.—Aramac Well (290 ft.); *S. Sharwood, Esq.*
- 1526G. *Crioceras*, sp.
Glanmire Block, 17 miles S.W. of Tambo; — *Goffage, Esq.*
- 1526H. *Crioceras*, or *Ammonites* ?
Aramac Well (at 224, 235, and 238 ft.); *R. L. Jack, Esq.*

1527. *Orioceras Jackii*, Etheridge, jun.
Walsh River; *Hon. A. C. Gregory*.
1528. *Crioceras Edkinsi*, Etheridge, jun.
Well, 7 miles east of Mt. Cornish Homestead; *E. R. Edkins, Esq.*
[Found 230 ft. below surface.]
1529. *Belemnitella diptycha*, McCoy.
Flinders River Series.—Cambridge Downs Run, 7 miles from Richmond Downs Station, Flinders River; — *Lander, Esq.*
- 1529A. *Belemnitella diptycha*, McCoy.
"Rolling Downs" formation.—Aramac Well (238 ft); *S. Sharwood, Esq.*
- 1529B. *Sections of Belemnites*.
"Rolling Downs" formation.—Aramac Well; *S. Sharwood, Esq.*
- 1529C. *Sections of Belemnites*.
"Rolling Downs" formation.—Blackall Road, 9 miles from Tambo; *R. L. Jack, Esq.*
- 1529D. *Belemnites?* (large sp.).
"Rolling Downs" formation.—Flinders River, near Hughenden Station; *Rev. T. W. Ramin*.
- 1529E. *Belemnites*, or *Belemnitella*.
"Rolling Downs" formation.—Flinders River, near Hughenden Station; *Rev. T. W. Ramin*.

POST TERTIARY.

Nos. 1530–1532.

1530. *Thalassina Emerii*, Bell.
Recent formation. Cleveland Bay, Townsville.
1531. *Shell-agglutinate*.
Recent formation? Keppel Bay; *Mr. J. Smith*.
1532. *Ostrea in Shell-agglutinate*.
Recent formation. Keppel Bay; *Mr. J. Smith*.
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ADDENDA.

GROUP I.—CLASS I.

- 2A. *E. P. Bedwell, Esq.* Westbourne.
 1. View in Botanical Gardens, Brisbane.
 2. Meerhayes.
 3. View on the Mary River.
 4. Somerset Port, Albany, 1872.
 5. Bank residence near Ipswich.
 6. Queensland Government steamer *Kate*.
 7. Bush Inn, Goodna.
- 5A. *C. Friestrom, Esq.*
 Oil-painting, "Mary Queen of Scots."
- 5B. *Arthur Hodgson, Esq.* Clopton.
 1. Brisbane River from Toorak, 1869.
 2. View from the main dividing range.
 3. Eton Vale, Darling Downs.

GROUP VI.

- 88A. *Allen.*
 Table made of Queensland cedar, the property of the Whitby Museum.
- 89A. *Johnson, Gregson & Co.*
 Two sideboards. One over mantlesheff, made of Queensland "Bean" tree.

GROUP X.

- 195A. *Dr. Joseph Bancroft* Brisbane.
 Sheaves of rice.

GROUP XII.

- 257A. *Hugh Romilly, Esq.* Brisbane.
 New Guinea curios.
- 277A. *A. Paterson, Esq.* R. T. Dept.
 Case of stuffed birds.
- 281A. *Hugh Romilly, Esq.* Brisbane.
 Specimens of New Guinea birds.
- 290A. *Queensland Commissioners.*
 Dugong skull and bones.



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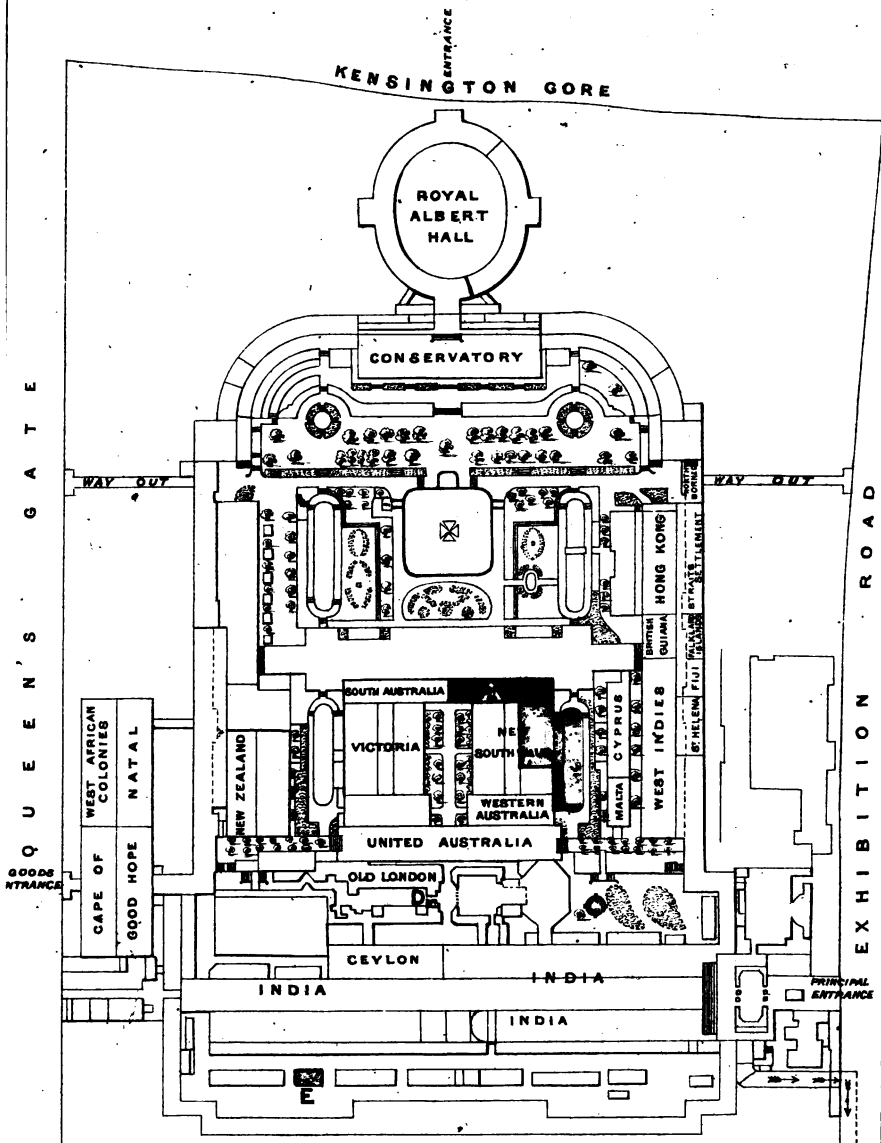
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COLONIAL AND INDIAN EXHIBITION, LONDON, 1886.

Executive President—HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.



Portion coloured Red shows space allotted to Queensland

A. *Queensland Court*

B. *Conservatory*

C. *Tank with Fountains of
Queensland Clam Shells*

D. *Executive Commissioners' Offices*

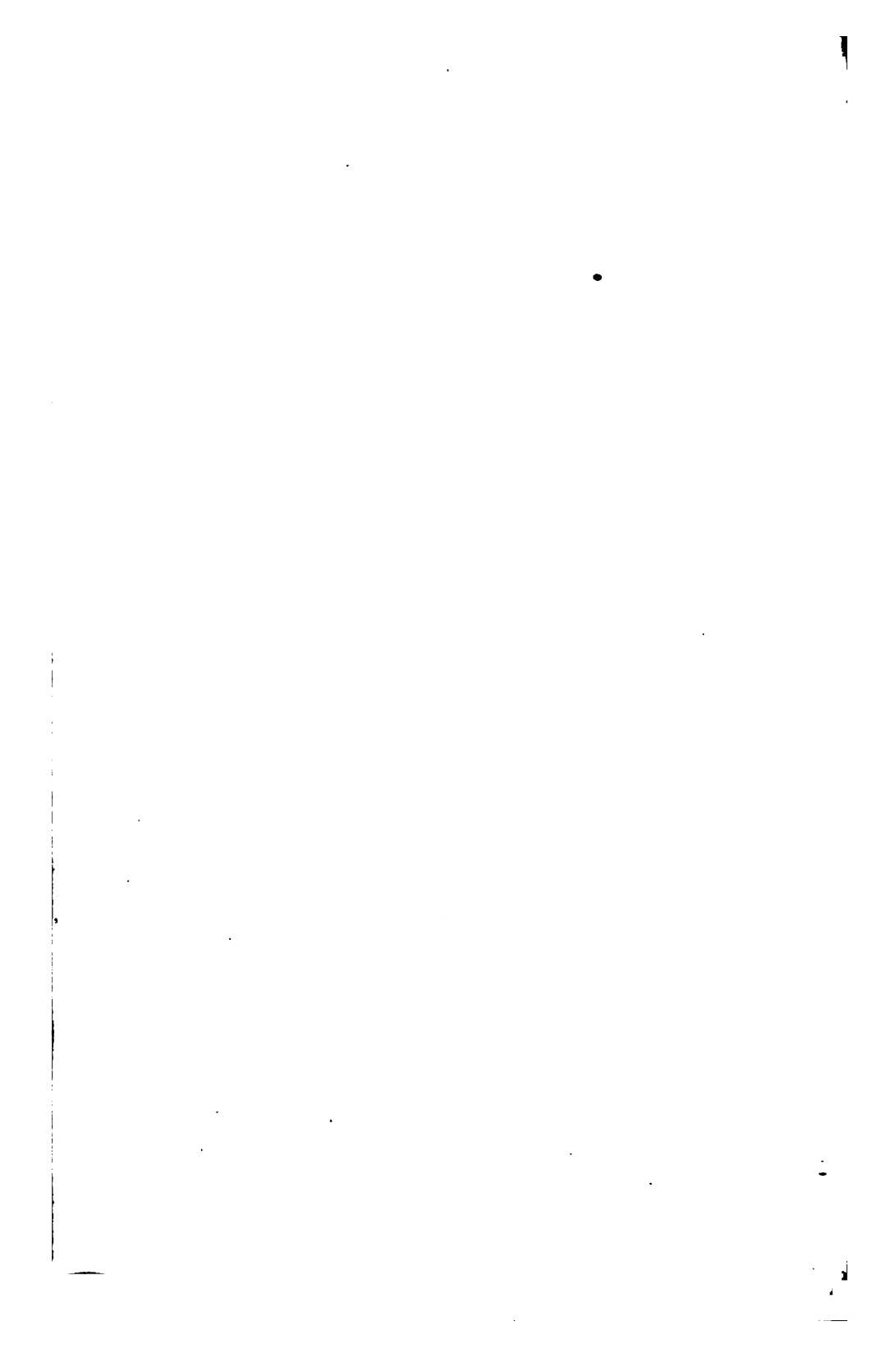
E. *Quartz Battery*

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